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HIGH LIGHT CME

Amyloid, hypometabolism, and cognition in Alzheimer disease

An [11C]PIB and [18F]FDG PET study

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Abstract—*Objective:* To investigate the association between brain amyloid load in Alzheimer disease (AD) measured by [11C]PIB-PET, regional cerebral glucose metabolism (rCMRGlc) measured by [18F]FDG-PET, and cognition. *Methods:* Nineteen subjects with AD and 14 controls had [11C]PIB-PET and underwent a battery of psychometric tests. Twelve of those subjects with AD and eight controls had [18F]FDG-PET. Parametric images of [11C]PIB binding and rCMRGlc were interrogated with a region-of-interest atlas and statistical parametric mapping. [11C]PIB binding and rCMRGlc were correlated with scores on psychometric tests. *Results:* AD subjects showed twofold increases in mean [11C]PIB binding in cingulate, frontal, temporal, parietal, and occipital cortical areas. Higher cortical amyloid load correlated with lower scores on facial and word recognition tests. Two patients fulfilling the clinical criteria for AD had normal [11C]PIB at baseline. Over 20 months this remained normal in one but increased in the cingulate of the other. Mean levels of temporal and parietal rCMRGlc were reduced by 20% in AD and these correlated with mini mental scores, immediate recall, and recognition memory test for words. Higher [11C]PIB uptake correlated with lower rCMRGlc in temporal and parietal cortices. *Conclusion:* [11C]PIB-PET detected an increased amyloid plaque load in 89% of patients with clinically probable Alzheimer disease (AD). The high frontal amyloid load detected by [11C]PIB-PET in AD in the face of spared glucose metabolism is of interest and suggests that amyloid plaque formation may not be directly responsible for neuronal dysfunction in this disorder.

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Amyloid plaques and neurofibrillary tangles are the pathologic hallmark of Alzheimer disease (AD). Postmortem studies suggest that amyloid deposition takes place decades before clinical symptoms of dementia appear.[1,2] Studies have shown correlation between neurofibrillary tangles (NFTs) and cognition,[3-5] while the relationship between amyloid plaque load and cognition is inconsistent.[6,7]

The PET tracer [11C]PIB is an hydroxylated benzothiazole (N-methyl-[11-C]2-(4′-methylaminophenyl)-6-hydroxybenzo-thiazole) which has been used as an amyloid imaging agent.[8] It was shown that there is a twofold increase in tracer retention in association cortical areas of subjects with AD compared with controls.[9] Similar results were subsequently reported by studies comparing the amyloid imaging agents [11C]SB-13 and [11C]PIB.[10] An [11C]PIB PET study examining the relationship between brain amyloid load and CSF amyloid-β_{42} has also replicated these findings.[11] [18F]FDG measures the regional cerebral glucose metabolism (rCMRGlc), a marker of synaptic activity. [18F]FDG-PET studies show that rCMRGlc is decreased by 10 to 20% in temporoparietal, occipital cortical regions and posterior cingulate gyri in subjects with AD.

In this present study we sought to examine the correlation between regional brain amyloid plaque load, measured with [11C]PIB-PET, regional cerebral glucose metabolism, measured with [18F]FDG-PET, and behavioral performance of subjects with clinically diagnosed AD. We also

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Table 1 Demography and [11C]PIB uptake ratios

	AD	Controls	*p* Value
Demography			
Total no.	19	14	—
Age, y, mean ± SD	66.8 ± 5.6	64.8 ± 6.2	NS
Male	9/19	8/14	—
Duration of diagnosis, months, mean ± SD	14.5 ± 6.5	—	—
MMSE, mean ± SD	21.2 ± 3.9	29–30	<0.0001
PIB uptake RATIO, mean ± SD			
Hippocampus	1.26 ± 0.19	1.16 ± 0.14	NS
Amygdalae	1.24 ± 0.22	1.05 ± 0.09	NS
Parahippocampus	1.36 ± 0.22	1.11 ± 0.10	<0.01
Primary motor cortex	1.70 ± 0.33	1.26 ± 0.10	<0.001
Primary sensory cortex	1.76 ± 0.38	1.21 ± 0.09	<0.001
Primary visual cortex	1.63 ± 0.33	1.17 ± 0.10	<0.001

AD = Alzheimer disease.

parametric mapping (SPM) to localize significant increases in [11C]PIB uptake in AD at a voxel level.

Methods. We recruited subjects from the Hammersmith Hospitals Trust and the National Hospital for Neurology and Neurosurgery, London, UK (table 1).

Of the 19 subjects with AD who had [11C]PIB-PET, 12 subjects also had [18F]FDG-PET within 6 weeks (mean 3.4 ± 2.1). All the healthy controls were recruited from the spouses of the AD subjects. Subjects were assigned a diagnosis of clinically probable AD based on the National Institute of Neurologic and Communicative Diseases and Stroke/AD and Related Disorders Association (NINCDS-ADRDA) criteria.[12] All subjects had detailed neurologic assessments including taking a history from a close relative, examination, and routine blood analysis, and EEG. All AD subjects were treated with acetylcholine esterase inhibitors from the time of diagnosis. Eighteen of the 19 AD subjects had a detailed neuropsychometric assessment using the following tests: 1) Mini-Mental State Examination[13] (MMSE), 2) Warrington short recognition memory tests (WRTM) for words and faces, 3) AD Assessment Scale Word List Learning test and 30 minute delayed recall,[14] 4) immediate and delayed recall of modified complex figure,[15] 5) Digit Span forwards,[16] 6) Trail Making Part A,[17] 7) clock drawing,[18] 8) copy of modified complex figure,[15] 9) 30-item Boston Naming Test,[19] 10) letter fluency (FAS),[20] 11) category fluency (animals, birds, and dogs).

The inclusion criteria for AD subjects were as follows: 1) age 55 to 79, 2) AD based on NINCDS-ADRDA and Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria, 3) subjects with a clinical diagnosis of AD before they enrolled into the study, 4) adequate visual and auditory acuity to complete the psychological testing, 5) a reliable caregiver who could provide information about the patient's clinical symptoms, 6) completion of standard ADRC evaluation, and 7) capable of giving informed consent.

The exclusion criteria were 1) significant white matter microvascular disease on MRI, 2) depression, 3) current or a recent history of drug or alcohol abuse/dependence, 4) any significant disease or unstable medical condition that could influence neuropsychological testing, 5) pregnancy, 6) participants in whom MRI is contraindicated, 7) a history of schizophrenia, schizoaffective disorder, bipolar disorder, or any history of electroconvulsive therapy, 8) history of cancer within the last 5 years except skin and prostate cancer.

Similar exclusion criteria were also applied when selecting control subjects. Dementia was excluded in the control subjects by detailed clinical examination and neuropsychological testing. Permission to perform these studies was obtained from the Ethics Committee of the Hammersmith Hospitals Trust while permission to administer radiotracers was obtained from the Administration of Radioactive Substances Advisory Committee (ARSAC) UK.

MRI. MRIs were obtained with a 1.5 Tesla GE scanner. T1 volumetric MRI (three-dimensional T1 volume, pulse sequence RF-Fast, acquisition times repetition time 30 msec, echo time 3 msec, flip angle 30 degrees, field of view 25 cm, matrix 156 × 256, voxel dimensions 0.98 × 0.98 × 1.6 mm) were acquired for coregistration and assessment of atrophy while T2-weighted images were acquired to rule out any structural abnormality in AD and control subjects.

[11C]PIB-PET. [11C]PIB was manufactured by Hammersmith Imanet, GE Healthcare, at the Cyclotron Building, Hammersmith Hospital. All subjects with AD and controls were scanned using a Siemens ECAT EXACT HR+ scanner[21] with an axial field of view of 15.5 cm. Sixty-three transaxial image planes were displayed as 2.46-mm slices with a reconstructed axial resolution of 5.4 mm and a transaxial resolution of 5.6 mm. A 10-minute transmission scan was performed to measure tissue attenuation. Dynamic emission scans were acquired in three-dimensional mode. All subjects had an IV bolus injection of [11C]PIB. The mean injected dose was 370 (±20) MBq and mean specific activity of 20,235(±6,240) MBq/μmol. PET emission scans were acquired over 90 minutes using a predetermined protocol: time frames 1 × 15s, 1 × 5s, 1 × 10s, 2 × 30s, 9 × 60s, 3 × 180s, 14 × 300s. All data processing and image reconstruction was performed using standard Siemens software which included scatter correction.

Analysis of [11C]PIB-PET. Target region to cerebellum ratios (RATIO). The target region to cerebellar [11C]PIB uptake ratio image was created by dividing a mean 60- to 90-minute tracer uptake image by the integral 60- to 90-minute uptake value of cerebellar gray matter (figure E-1 on the *Neurology* Web site at www.neurology.org). Initially a 60- to 90-minute uptake image was created by integrating the activity collected from 60 to 90 minutes in Matlab 6. Single subject MRIs were coregistered to the 60- to 90-minute images using coregistration software (mpr).[22] A cerebellar gray matter region of interest (ROI) was traced manually on the coregistered MRI. Mean cerebellar tracer uptake was then calculated by sampling the 60- to 90-minute image in Analyze AVW 6.1. The 60- to 90-minute image was then divided by the cerebellar uptake value to create a 60- to 90-minute ratio (RATIO) image using image calculator in Analyze AVW 6.1. Target to cerebellar ratios at these later times provide a blood flow independent measure of [11C]PIB retention that is easy to calculate, robust, rests on minimum assumptions, and does not require arterial sampling.[23,24]

ROI analysis. We used statistical parametric mapping software (SPM99, Wellcome Department of Imaging Neuroscience, UCL, London, UK; http:www.fil.ion.ucl.ac.uk/spm) to 1) segment individual patient MRIs to gray, white, and CSF, 2) coregister PET to the individual MRIs, and 3) use individual MRIs to spatially transform these and the coregistered PET images into Montreal Neurologic Institute (MNI) standard stereotaxic space.

Transaxial planes of individual subject MRIs were oriented parallel to the AC-PC line. Integral images of [11C]PIB uptake were coregistered to their MRI counterparts using SPM99. Then, the individual 60 to 90′ uptake RATIO images were coregistered to the corresponding MRIs. Both coregistered RATIO images and

MRIs were subsequently spatially normalized to the T1 MRI template in MNI/ICBM152 space using the default settings in SPM99. MRIs were segmented into gray matter, white matter, and CSF using SPM99, and gray matter images thresholded at 50% probability. We convolved this binarised gray matter map with the latest version of a probabilistic brain atlas.[25] We then sampled [11C]PIB uptake RATIO images using Analyze AVW 6.1 in the following regions: frontal, temporal, and parietal association cortices, anterior and posterior cingulate gyrus, striatum, thalamus, and a cerebellar gray matter reference region (figure E-2). In addition, we examined hippocampus, amygdala, and parahippocampal gyrus, primary motor, primary sensory, and primary visual cortex.

Statistical parametric mapping of [11C]PIB-PET. Clusters of significant differences in mean 60- to 90-minute [11C]PIB region to cerebellar uptake ratios between 19 AD subjects and 14 control subjects were also localized at a voxel level using SPM99. Spatially normalized RATIO images were interrogated using a threshold of $p < 0.00001$ with an extent threshold of 200 voxels to detect significant change without applying analysis of covariance (ANCOVA) or proportional scaling. As [11C]PIB uptake was high in AD compared with the healthy control subjects SPM was not able to interrogate the parametric images at a lower threshold for significance. We subsequently used a primary motor, primary sensory, and primary visual cortical ROI mask to allow us to evaluate these regions with a lower statistical threshold for significance using SPM.

[18F]FDG-PET scans. All subjects with AD and healthy controls were scanned using a Siemens ECAT EXACT HR+ scanner as described above. Subjects were asked to fast for 4 hours before the bolus injection of 185 (±8) MBq of [18F]FDG. A 60-minute dynamic emission scan was acquired using predefined protocol with time frames 1 × 15s, 1 × 5s, 4 × 10s, 4 × 30s, 4 × 60s, 4 × 120s, and 9 × 300s. All subjects had radial artery cannulation. Continuous online sampling was performed for 15 minutes and then discrete blood samples were taken at baseline, 5, 10, 15, 20, 30, 40, 50, and 60 minutes. A hematocrit was estimated from the baseline blood sample and plasma glucose levels were measured on selected samples.

Analysis of [18F]FDG-PET. Parametric maps of absolute rCMRGlc were generated with spectral analysis using an arterial input function as previously described.[26,27] We used a lumped constant of 0.48. For ROI analysis of [18F]FDG scans all the individual images were coregistered to their corresponding MRIs and then normalized to MNI space as described above for [11C]PIB. Gray and white matter were combined when creating the object map and the regions were sampled in the similar way as for [11C]PIB. We interrogated function of the anterior and posterior cingulate cortex, thalamus, striatum, frontal, temporal, parietal, and occipital cortical regions. In addition we examined hippocampus, amygdale, parahippocampal gyrus, and also sampled primary motor and primary sensory cortex rCMRGlc.

Statistical parametric mapping of [18F]FDG-PET. A between group comparison of parametric rCMRGlc images of 12 AD and eight control subjects was performed employing SPM to localize significant changes in mean [18F]FDG uptake at a voxel level using a threshold of $p < 0.001$ with an extent threshold of 50 voxels. ANCOVA was applied to remove the confounding effects of global on regional uptake variance.

Statistical analysis. Statistical analyses were performed using SPSS for Windows version 12 (SPSS, Chicago, IL). Between-group regional differences were analyzed using Student t test. Individual AD subject values outside the control mean ± 2 SD were taken as statistically significant outliers. Correlations between regional [11C]PIB uptake with regional rCMRGlc were interrogated using Pearson's correlation. Whole cortical [11C]PIB and regional (posterior cingulate, frontal, temporal, parietal, and occipital) cortical [11C]PIB uptake were correlated with performance on neuropsychometric tests for the 18 subjects with AD using Spearman's rank correlation statistic. In 11 subjects with AD the regional cortical and hippocampal, amygdala, and parahippocampal rCMRGlc were correlated with neuropsychometric scores using Spearman's rank correlation. Colinearity between [11C]PIB imaging data and psychometric data were investigated using Partial Least Squares.[28] In short, the method uses singular value decomposition (SVD) to extract the factors of the cross-covariance matrix between ROI data and the psychometric scores.

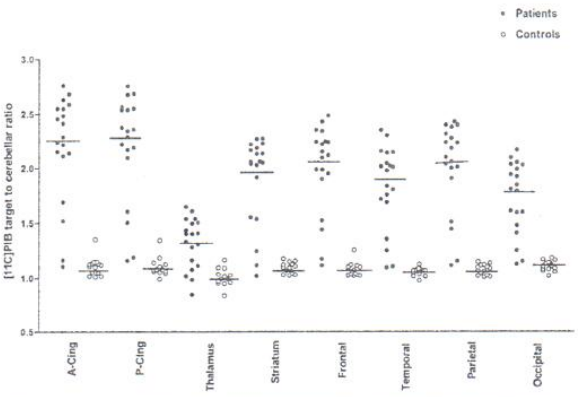

Figure 1. Comparison between mean target region:cerebellar 60 to 90 minutes. [11C]PIB RATIO between 19 subjects with Alzheimer disease and 14 controls. Shows anterior cingulate, posterior cingulate, thalamus, striatum, frontal, temporal, parietal, and occipital regions significantly increased ($p < 0.001$).

Factors consist of a numerical load for both ROIs and psychometric scores. To each factor, SVD associates a singular value. For the purposes of this analysis, singular values were used to calculate the percentage of variance explained by each factor and Morgera's covariance complexity.[29]

Results. *[11C]PIB-PET.* ROI analysis of [11C]PIB-PET data. Seventeen of the 19 (89%) subjects with AD showed ($p < 0.001$) raised [11C]PIB retention in association cortical and striatal areas in comparison to the healthy control group (figure 1). We found that levels of mean [11C]PIB uptake in AD hippocampus and amygdala were in the upper normal range while the parahippocampus showed a mild but significant 20% increase in [11C]PIB uptake in comparison to the control group. Primary cortical areas (motor, sensory, and visual cortex) showed around a 40% increase in amyloid load vs the control group (table 1), lower than the twofold increases seen in association cortical areas (figure 1).

Two of the 19 subjects with AD had regional [11C]PIB uptake that was within the range of control subjects. A 70-year-old woman (Case 1) was clinically diagnosed with AD 6 months before PET. The MRI showed mild cortical atrophy, but there was no significant hippocampal atrophy. This patient was reassessed 20 months later and [11C]PIB uptake was essentially unchanged, however, her behavioral performance had deteriorated. [18F]FDG-PET was normal on both occasions. The second patient (Case 2) was a 66-year-old man who was also clinically diagnosed with AD 6 months before PET. MRI showed generalized cortical atrophy but did not reveal significant hippocampal atrophy. His [11C]PIB uptake ratios at baseline were within two SD of the control mean. The neuropsychometric scores at the baseline and follow-up after 20 months were largely unchanged though some worsened or improved. His cingulate [11C]PIB uptake at 20 months had mildly increased: 1.40 in anterior cingulate gyrus (baseline = 1.17), 1.31 in posterior cingulate (baseline = 1.19), and was now above the normal range. He did not have baseline [18F]FDG-PET but a scan at 20 months showed a reduction in hippocampal rCMRGlc.

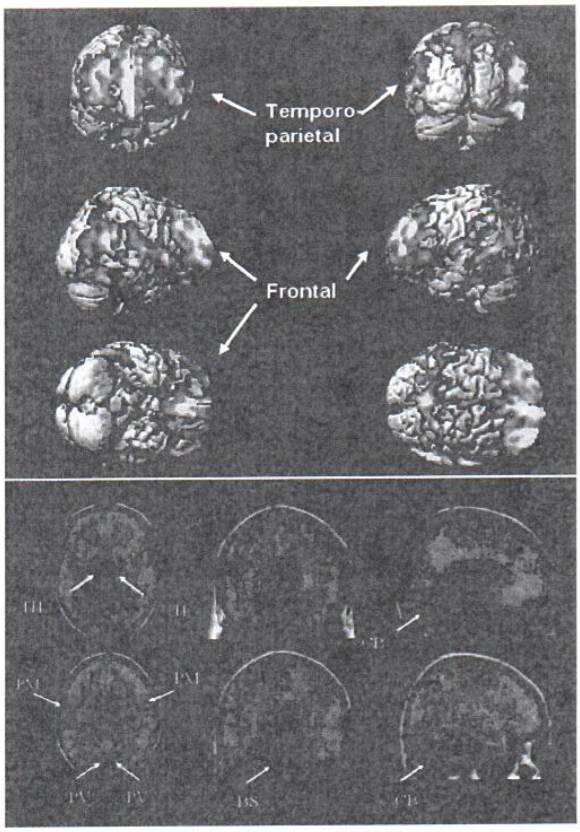

Figure 2. Localization of increased [11C]PIB uptake in Alzheimer disease compared with normal revealed by SPM, $p < 0.00001$. Primary motor (PM) and primary visual (PV) cortical areas, thalamus (TH), brainstem (BS), and cerebellum (CB) show no significant increase in PIB uptake compared with control subjects at that threshold.

Statistical parametric mapping of [11C]PIB-PET. SPM localized significantly increased mean [11C]PIB uptake in frontal, temporal, and parietal association areas and the striatum of the AD cohort in comparison to the control group. Primary motor, primary visual cortex, thalamus, and brainstem [11C]PIB uptake was not significantly raised at a threshold of $p < 0.00001$ vs the control group (figure 2). Using a mask to isolate primary motor, primary sensory, and primary visual areas [11C]PIB uptake was significantly raised at a threshold of $p < 0.0001$ in these regions.

[18F]FDG-PET. Analysis of [18F]FDG uptake. With ROI analysis, the AD group of 12 subjects showed mean rCMRGlc reductions of 23% in the posterior cingulate gyrus ($p < 0.0006$), 23% in the temporal cortex ($p < 0.0005$), 19% in the parietal cortex ($p < 0.0002$), and 17% in the occipital ($p < 0.007$) cortex compared to the control subjects (figure E-3). AD hippocampus showed a mean rCMRGlc reduction of 32% ($p < 0.001$) compared to the control group. AD amygdale showed a rCMRGlc reduction of 30% ($p < 0.001$), while parahippocampal gyrus showed a reduction of 27% ($p < 0.001$).

After normalization to whole brain glucose, posterior cingulate showed a relative reduction of 10.8% ($p < 0.008$), temporal cortex 10.6% ($p < 0.001$), and parietal cortex 5.9% ($p < 0.0003$) in AD subjects compared with healthy controls. SPM localized significant relative rCMRGlc decreases in temporoparietal and occipital regions in AD, but not in frontal regions (figure 3).

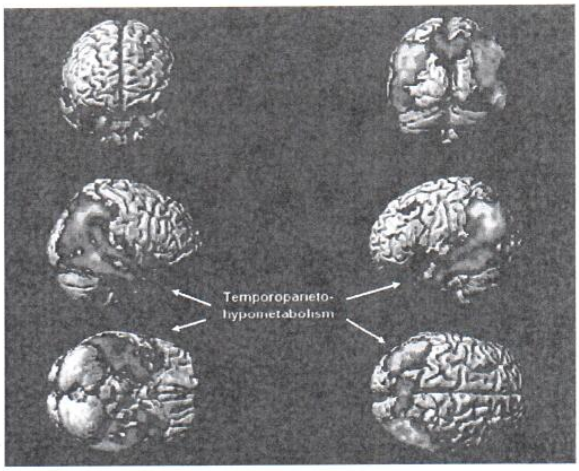

Figure 3. Reduction in temporoparietal glucose metabolism comparing 12 subjects with Alzheimer disease vs 8 controls in SPM ($p < 0.001$).

Individually, 10 of our 12 AD cases studied with FDG PET showed significant reductions in cortical rCMRGlc. Two cases, however, had normal levels of rCMRGlc, one of whom had raised and the other normal [11C]PIB uptake. A sub-analysis of hippocampus rCMRGlc showed individually decreased glucose metabolism in 9 of the 12 subjects. Those two who did not show decreased cortical hypometabolism also had normal hippocampal rCMRGlc. Primary motor and sensory cortex did not show a significant decrease in rCMRGlc in the subjects with AD. When individual rCMRGlc values were compared with [11C]PIB uptake ratios, lower rCMRGlc values correlated with higher [11C]PIB uptake ratios in temporal ($p = 0.047$, $r = -0.583$) and parietal ($p = 0.041$, $r = -0.595$) but not in frontal ($p = 0.998$, $r = 0.001$) cortical regions (figure 4).

Cognitive testing and [11C]PIB uptake in AD. The average neuropsychometry scores for the AD subjects and control subjects are detailed in table 2. Higher whole cortical [11C]PIB uptake correlated with lower scores on the Warrington short recognition memory test for words and faces. Amyloid load in frontal, temporal, parietal, and oc-

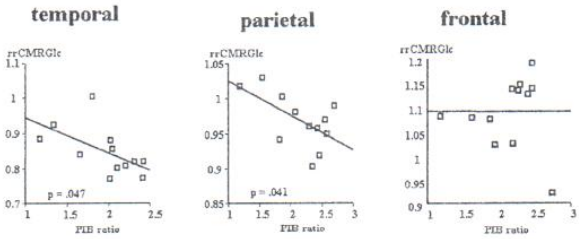

Figure 4. Higher [11C]PIB RATIO correlates with lower temporal and parietal rCMRGlc, while there is no correlation in the frontal region.

Table 2 Memory tests of subjects with Alzheimer disease (AD) and control subjects

	MMSE	Immediate recall	Delayed recall	WRMT words	WRMT faces	Forward digit span	Trail Making A (sec)	Trail Making B	Boston Naming Test	Rey Copy	Letter fluency (FAS)	Category fluency
Controls, mean (SD)	29.4 (1.2)	8.2 (0.9)	7.8 (1.4)	24 (1.3)	21.2 (1.2)	7.7 (2.5)	32.4 (9.7)	69.6 (27.5)	26.2 (2.3)	23.9 (0.3)	46.9 (13.2)	52.4 (12.7)
AD, mean (SD)	21.2 (3.9)	3.9 (1.7)	1.4 (2.6)	17.2 (3.5)	17.9 (3.2)	6.6 (1.7)	107 (81)	205 (112)	17.8 (6)	15 (3.5)	26.6 (11.8)	18.3 (11.1)
p Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	<0.001	<0.007	<0.01	<0.001

MMSE = Mini-Mental State Examination; WRMT = Warrington Recognition Memory Test.

cipital regions also correlated with performance on the Warrington short recognition memory tests for words and faces (table 3). Exclusion of the two AD subjects who had normal baseline levels of [11C]PIB uptake from the analysis abolished correlations between recognition memory scores and cortical amyloid load. Partial Least Square analysis revealed that the cross-covariance matrix had one dimension only (Morgera's Complexity 0.002) that consisted of one factor explaining 99% of the total covariance. This factor consisted of all sampled ROI and memory scores (short faces/short words). When the two subjects with AD with negligible PIB uptake were excluded, the amount of variance explained by the factor did not change significantly (94% of total covariance).

Relationship between cognitive testing and rCMRGlc in AD. We studied 11 subjects with AD. Levels of temporal lobe metabolism correlated with scores for the MMSE (Spearman's rho, $\rho = 0.717$, $p = 0.013$), immediate recall ($\rho = 0.801$, $p = 0.003$), category fluency test ($\rho = 0.695$, $p = 0.026$), and recognition memory for words ($\rho = 0.650$, $p = 0.030$). The hippocampal rCMRGlc correlated with immediate recall ($\rho = 0.723$, $p = 0.012$). Amygdale rCMRGlc correlated with the recognition memory for words ($\rho = 0.632$, $p = 0.037$). These correlations remained significant even after the exclusion of the one patient with AD with normal rCMRGlc levels.

Discussion. Our study demonstrates that uptake of the beta amyloid marker [11C]PIB is significantly increased in early AD vs healthy controls. This is consistent with findings reported in a previous study.[9] Individually, 17 of our 19 clinically probable AD subjects revealed an increased amyloid plaque load and the group showed mean 2- to 2.5-fold increases in association cortical area and cingulate gyri [11C]PIB uptake vs the controls. This magnitude of increase in signal suggests that [11C]PIB-PET should prove a sensitive diagnostic marker for AD.

A striking feature of [11C]PIB uptake in AD is the high frontal as well as temporoparietal signals. This pattern of [11C]PIB uptake has previously been described[9] and, in fact, is in keeping with the known pathologic distribution of beta amyloid in AD.[30] PIB is a neutral thioflavin which in AD brain slices shows nanomolar affinity for neuritic amyloid plaques but low affinity toward diffuse amyloid deposits and intracellular NFTs. Braak's pathologic studies have shown that the deposition of amyloid plaques in early AD takes place in both the basal frontal and temporal neocortex and then spreads to the adjoining neocortical areas and hippocampus.[30] It could be argued that relative sparing of frontal blood flow could contribute to the relatively raised [11C]PIB signal in AD. However, blood flow independent DV images of [11C]PIB uptake generated with Logan plots or compartmental analysis also show increased frontal amyloid making this explanation unlikely.[31]

The relatively low [11C]PIB uptake by the hippocampus, amygdala, and parahippocampus compared with cortical association areas in AD has not been previously reported. As we did not use a partial volume correction it could be argued that the low [11C]PIB binding in these areas in part reflects atrophy, however, this explanation cannot fully explain the low specific signal as we found a twofold increase in anterior cingulate amyloid load, a structure of similar volume. Relatively late deposition of amyloid in the hippocampus has been described in neuropathologic studies.[30] Our [11C]PIB and FDG PET findings coupled with neuropathologic observations are important as they suggest that amyloid deposition is not necessarily associated with neuronal dysfunction, as reflected by the reduced glucose metabolism in these areas, or impaired performance on tests of recall. This viewpoint is reinforced by the

Table 3 Spearman's rho (ρ) correlation with [11C]PIB uptake and neuropsychometry

	Posterior cingulate gyrus	Frontal	Temporal	Parietal	Occipital	Whole brain
WRMT words	$\rho = -0.455$	$\rho = -0.469$	$\rho = -0.494$	$\rho = -0.497$	$\rho = -0.529$	$\rho = -0.493$
	p = NS	$p = 0.050$	$p = 0.037$	$p = 0.036$	$p = 0.024$	$p = 0.038$
WRMT faces	$\rho = -0.355$	$\rho = 0.475$	$\rho = 0.469$	$\rho = -0.552$	$\rho = -0.523$	$\rho = -0.533$
	p = NS	$p = 0.046$	$p = 0.050$	$p = 0.017$	$p = 0.026$	$p = 0.023$

WRMT = Warrington Recognition Memory Test.

finding of increased amyloid load in frontal regions without associated reductions in glucose metabolism.

Graphical Logan analysis using an arterial plasma input function has been suggested to be the preferred method for [11C]PIB-PET analysis by Price et al.[31] A more simplified ratio method has also been evaluated against arterial plasma input dependent methods.[23] Target to cerebellum uptake ratios over 60 to 90 minutes provide a reliable method of analysis of [11C]PIB-PET scans, comparable results to Logan plot derived DVRs, and are simpler to generate.[23,31] We have previously reported that 60 to 90 minute uptake RATIOs correlate closely with DV ratios generated by both compartmental modeling and spectral analysis using arterial input functions.[24] The cerebellar time activity curves for [11C]PIB were not different between patient and control groups. The advantage of a 60 to 90′ RATIO method is that it potentially shortens the scan time and the analysis is simple.

To date, the use of statistical parametric mapping (SPM) to interrogate [11C]PIB-PET findings has not been reported. In AD use of SPM localized widespread significant increases in [11C]PIB uptake in frontal, temporal, and parietal association cortices and also in striatum. SPM is voxel based and makes no a priori assumptions about the locations of significant differences. It allows the entire brain volume to be interrogated and so can detect changes which may not be picked up by an ROI analysis which requires a predefined template. Compared with the control subjects SPM detected no significantly increased [11C]PIB uptake in the brainstem and thalamus of AD subjects. It also showed that, despite the significant 2- to 2.5-fold increases in [11C]PIB binding in frontal, temporal, parietal, occipital regions, the increases in amyloid load in primary cortical areas (motor and visual) in AD did not reach significance at a threshold of $p < 0.00001$. Use of this strict threshold allowed us to see which regions are maximally affected. However, when a lower threshold of $p < 0.0001$ was employed and primary motor, primary sensory, and primary visual cortex were isolated with a mask SPM localized a significant uptake in these regions consistent with the ROI analysis. This is in line with the pathologic studies that suggest relatively late involvement of these regions in AD.[32]

[18F]FDG-PET showed the classic AD pattern of temporo-parietal and posterior cingulate hypometabolism in our subjects.[33,34] We were also able to demonstrate significantly decreased hippocampal and amygdalae glucose metabolism in 75% of individual subject with AD. Even though we did not attempt a partial volume correction, hippocampal hypometabolism has been reported to be one of the earliest functional changes in AD and mild cognitive impairment.[35] Other groups have also reported reductions in hippocampal, amygdale, and posterior cingulate hypometabolism in AD.[36,37] Lesion studies have documented amnesia in subjects with damage to hippocampi.[38] The hippocampal, parahippocampal gyri and amygdale hypometabolism clearly demonstrates the involvement of the limbic cortex in AD. The reduced percentage reductions after normalization to global rCMRGlc are attributable to the globally decreased glucose metabolism in AD subjects compared with controls.

Along with only moderate increases in [11C]PIB uptake relative to association cortex, we found no significant reductions in rCMRGlc for the primary motor and sensory cortex rCMRGlc in AD compared with control subjects. There are differences in opinion concerning the involvement of the primary cortical areas in AD. Neuropathologic studies[30,32,39] have shown that in the preliminary stages of disease there is involvement of the basal forebrain, the pathology then spreading to cortical association and only finally to primary cortical areas.

In our study we demonstrated that 17 out of 19 subjects with AD individually had increased levels of association cortical [11C]PIB binding while 10 out of 12 subjects showed decreased temporo-parietal [18F]FDG uptake. After 20 months one of the two AD subjects with normal [11C]PIB uptake at baseline, a 70-year-old woman, continued to show no significant change on imaging but she had deteriorated clinically. The other case, a 66-year-old man, showed mildly increased cingulate [11C]PIB uptake on follow-up and reduced hippocampal rCMRGlc compatible with AD. He was started on the cholinesterase inhibitor donepezil and reported subjective improvement though still has poor recall.

None of our 14 control subjects had raised levels of [11C]PIB uptake. It has been reported that the proportion of subjects exhibiting incidental amyloid deposits and neurofibrillary changes rises with advancing age.[32] We presume that the lack of any significant uptake in our control subjects partly reflects their relatively young age (mean age 65).

Using neuropathologic confirmation as a gold standard, it has been reported that the sensitivity of a diagnosis of AD based on clinical criteria varies from 49 to 100% (average 81% across series) and specificity varies from 47 to 100% (average 70% across series).[40] Pathologic studies have confirmed that it is possible to have significant memory problems without substantial plaque and tangle load—especially in more elderly subjects.[6,41] These cases without significant plaque and tangle load presumably have mechanisms other than amyloid deposition underlying their memory impairment. Although we need pathologic confirmation for a definitive diagnosis, clinically our two [11C]PIB-PET negative subjects at baseline fulfilled the NINCDS-ADRDA criteria for a clinical diagnosis of AD and one of them now shows [11C]PIB PET findings compatible with early disease.

In our study we found a correlation between the amyloid deposition measured with [11C]PIB PET and reduced resting glucose metabolism reflected by [18F]FDG uptake in temporal and parietal regions while there was a lack of correlation between

frontal amyloid load and metabolism. According to Braak staging frontal neurofibrillary tangles are formed relatively late in the disease process whereas frontal amyloid is found much earlier. [18F]FDG-PET reflects neuronal synaptic function and so probably is influenced more by intraneuronal tangle than extracellular plaque formation. This dissociation between amyloid load and glucose metabolism again raises the question about the role of plaque formation in the destruction of neurons.

Though the correlation between impaired performance on recognition memory tests for words and faces and cortical [11C]PIB uptake suggest that amyloid load contributes to cognitive impairment, the loss of this correlation on withdrawing the AD subjects with normal baseline [11C]PIB PET suggests that amyloid deposition alone is unlikely to explain memory difficulties. Pathologic studies on Down syndrome cases suggest that amyloid deposition may take place early in the disease process before neuronal damage and dementia occur.[2] It is also reported that in neuropathologic studies there is stronger correlation between degree of dementia and neurofibrillary tangles density than amyloid plaque load.[41,42] It is conceivable that amyloid deposition occurs alongside or before the intracellular processes that lead to cognitive difficulties. This viewpoint is reinforced by the stronger correlation of recognition with temporal cortical hypometabolism which survived removal of an AD case with normal FDG uptake. [18F]FDG-PET reflects the functional integrity of synapses rather than extracellular protein aggregation. Longitudinal [11C]PIB and [18F]FDG-PET studies of healthy controls and subjects with very mild memory problems will be necessary to further establish the exact relationship between amyloid plaque deposition and loss of neuronal synaptic function in AD.

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Amyloid, hypometabolism, and cognition in Alzheimer disease: An [11C]PIB and [18F]FDG PET study

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HIGH LIGHT
CME

Amyloid, hypometabolism, and cognition in Alzheimer disease

An [11C]PIB and [18F]FDG PET study

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Abstract—*Objective:* To investigate the association between brain amyloid load in Alzheimer disease (AD) measured by [11C]PIB-PET, regional cerebral glucose metabolism (rCMRGlc) measured by [18F]FDG-PET, and cognition. *Methods:* Nineteen subjects with AD and 14 controls had [11C]PIB-PET and underwent a battery of psychometric tests. Twelve of those subjects with AD and eight controls had [18F]FDG-PET. Parametric images of [11C]PIB binding and rCMRGlc were interrogated with a region-of-interest atlas and statistical parametric mapping. [11C]PIB binding and rCMRGlc were correlated with scores on psychometric tests. *Results:* AD subjects showed twofold increases in mean [11C]PIB binding in cingulate, frontal, temporal, parietal, and occipital cortical areas. Higher cortical amyloid load correlated with lower scores on facial and word recognition tests. Two patients fulfilling the clinical criteria for AD had normal [11C]PIB at baseline. Over 20 months this remained normal in one but increased in the cingulate of the other. Mean levels of temporal and parietal rCMRGlc were reduced by 20% in AD and these correlated with mini mental scores, immediate recall, and recognition memory test for words. Higher [11C]PIB uptake correlated with lower rCMRGlc in temporal and parietal cortices. *Conclusion:* [11C]PIB-PET detected an increased amyloid plaque load in 89% of patients with clinically probable Alzheimer disease (AD). The high frontal amyloid load detected by [11C]PIB-PET in AD in the face of spared glucose metabolism is of interest and suggests that amyloid plaque formation may not be directly responsible for neuronal dysfunction in this disorder.

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Amyloid plaques and neurofibrillary tangles are the pathologic hallmark of Alzheimer disease (AD). Postmortem studies suggest that amyloid deposition takes place decades before clinical symptoms of dementia appear.[1,2] Studies have shown correlation between neurofibrillary tangles (NFTs) and cognition,[3-5] while the relationship between amyloid plaque load and cognition is inconsistent.[6,7]

The PET tracer [11C]PIB is an hydroxylated benzothiazole (N-methyl-[11-C]2-(4′-methylaminophenyl)-6-hydroxybenzo-thiazole) which has been used as an amyloid imaging agent.[8] It was shown that there is a twofold increase in tracer retention in association cortical areas of subjects with AD compared with controls.[9] Similar results were subsequently reported by studies comparing the amyloid imaging agents [11C]SB-13 and [11C]PIB.[10] An [11C]PIB PET study examining the relationship between brain amyloid load and CSF amyloid-β_{42} has also replicated these findings.[11] [18F]FDG measures the regional cerebral glucose metabolism (rCMRGlc), a marker of synaptic activity. [18F]FDG-PET studies show that rCMRGlc is decreased by 10 to 20% in temporoparietal, occipital cortical regions and posterior cingulate gyri in subjects with AD.

In this present study we sought to examine the correlation between regional brain amyloid plaque load, measured with [11C]PIB-PET, regional cerebral glucose metabolism, measured with [18F]FDG-PET, and behavioral performance of subjects with clinically diagnosed AD. We also used statistical

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Table 1 *Demography and [11C]PIB uptake ratios*

	AD	Controls	*p* Value
Demography			
Total no.	19	14	—
Age, y, mean ± SD	66.8 ± 5.6	64.8 ± 6.2	NS
Male	9/19	8/14	—
Duration of diagnosis, months, mean ± SD	14.5 ± 6.5	—	—
MMSE, mean ± SD	21.2 ± 3.9	29–30	<0.0001
PIB uptake RATIO, mean ± SD			
Hippocampus	1.26 ± 0.19	1.16 ± 0.14	NS
Amygdalae	1.24 ± 0.22	1.05 ± 0.09	NS
Parahippocampus	1.36 ± 0.22	1.11 ± 0.10	<0.01
Primary motor cortex	1.70 ± 0.33	1.26 ± 0.10	<0.001
Primary sensory cortex	1.76 ± 0.38	1.21 ± 0.09	<0.001
Primary visual cortex	1.63 ± 0.33	1.17 ± 0.10	<0.001

AD = Alzheimer disease.

parametric mapping (SPM) to localize significant increases in [11C]PIB uptake in AD at a voxel level.

Methods. We recruited subjects from the Hammersmith Hospitals Trust and the National Hospital for Neurology and Neurosurgery, London, UK (table 1).

Of the 19 subjects with AD who had [11C]PIB-PET, 12 subjects also had [18F]FDG-PET within 6 weeks (mean 3.4 ± 2.1). All the healthy controls were recruited from the spouses of the AD subjects. Subjects were assigned a diagnosis of clinically probable AD based on the National Institute of Neurologic and Communicative Diseases and Stroke/AD and Related Disorders Association (NINCDS-ADRDA) criteria.[12] All subjects had detailed neurologic assessments including taking a history from a close relative, examination, and routine blood analysis, and EEG. All AD subjects were treated with acetylcholine esterase inhibitors from the time of diagnosis. Eighteen of the 19 AD subjects had a detailed neuropsychometric assessment using the following tests: 1) Mini-Mental State Examination[13] (MMSE), 2) Warrington short recognition memory tests (WRTM) for words and faces, 3) AD Assessment Scale Word List Learning test and 30 minute delayed recall,[14] 4) immediate and delayed recall of modified complex figure,[15] 5) Digit Span forwards,[16] 6) Trail Making Part A,[17] 7) clock drawing,[18] 8) copy of modified complex figure,[15] 9) 30-item Boston Naming Test,[19] 10) letter fluency (FAS),[20] 11) category fluency (animals, birds, and dogs).

The inclusion criteria for AD subjects were as follows: 1) age 55 to 79, 2) AD based on NINCDS-ADRDA and Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria, 3) subjects with a clinical diagnosis of AD before they enrolled into the study, 4) adequate visual and auditory acuity to complete the psychological testing, 5) a reliable caregiver who could provide information about the patient's clinical symptoms, 6) completion of standard ADRC evaluation, and 7) capable of giving informed consent.

The exclusion criteria were 1) significant white matter microvascular disease on MRI, 2) depression, 3) current or a recent history of drug or alcohol abuse/dependence, 4) any significant disease or unstable medical condition that could influence neuropsychological testing, 5) pregnancy, 6) participants in whom MRI is contraindicated, 7) a history of schizophrenia, schizoaffective disorder, bipolar disorder, or any history of electroconvulsive therapy, 8) history of cancer within the last 5 years except skin and prostate cancer.

Similar exclusion criteria were also applied when selecting control subjects. Dementia was excluded in the control subjects by detailed clinical examination and neuropsychological testing. Permission to perform these studies was obtained from the Ethics Committee of the Hammersmith Hospitals Trust while permission to administer radiotracers was obtained from the Administration of Radioactive Substances Advisory Committee (ARSAC) UK.

MRI. MRIs were obtained with a 1.5 Tesla GE scanner. T1 volumetric MRI (three-dimensional T1 volume, pulse sequence RF-Fast, acquisition times repetition time 30 msec, echo time 3 msec, flip angle 30 degrees, field of view 25 cm, matrix 156 × 256, voxel dimensions 0.98 × 0.98 × 1.6 mm) were acquired for coregistration and assessment of atrophy while T2-weighted images were acquired to rule out any structural abnormality in AD and control subjects.

[11C]PIB-PET. [11C]PIB was manufactured by Hammersmith Imanet, GE Healthcare, at the Cyclotron Building, Hammersmith Hospital. All subjects with AD and controls were scanned using a Siemens ECAT EXACT HR+ scanner[21] with an axial field of view of 15.5 cm. Sixty-three transaxial image planes were displayed as 2.46-mm slices with a reconstructed axial resolution of 5.4 mm and a transaxial resolution of 5.6 mm. A 10-minute transmission scan was performed to measure tissue attenuation. Dynamic emission scans were acquired in three-dimensional mode. All subjects had an IV bolus injection of [11C]PIB. The mean injected dose was 370 (±20) MBq and mean specific activity of 20,235(±6,240) MBq/μmol. PET emission scans were acquired over 90 minutes using a predetermined protocol: time frames 1 × 15s, 1 × 5s, 1 × 10s, 2 × 30s, 9 × 60s, 3 × 180s, 14 × 300s. All data processing and image reconstruction was performed using standard Siemens software which included scatter correction.

Analysis of [11C]PIB-PET. Target region to cerebellum ratios (RATIO). The target region to cerebellar [11C]PIB uptake ratio image was created by dividing a mean 60- to 90-minute tracer uptake image by the integral 60- to 90-minute uptake value of cerebellar gray matter (figure E-1 on the *Neurology* Web site at www.neurology.org). Initially a 60- to 90-minute uptake image was created by integrating the activity collected from 60 to 90 minutes in Matlab 6. Single subject MRIs were coregistered to the 60- to 90-minute images using coregistration software (mpr).[22] A cerebellar gray matter region of interest (ROI) was traced manually on the coregistered MRI. Mean cerebellar tracer uptake was then calculated by sampling the 60- to 90-minute image in Analyze AVW 6.1. The 60- to 90-minute image was then divided by the cerebellar uptake value to create a 60- to 90-minute ratio (RATIO) image using image calculator in Analyze AVW 6.1. Target to cerebellar ratios at these later times provide a blood flow independent measure of [11C]PIB retention that is easy to calculate, robust, rests on minimum assumptions, and does not require arterial sampling.[23,24]

ROI analysis. We used statistical parametric mapping software (SPM99, Wellcome Department of Imaging Neuroscience, UCL, London, UK; http:www.fil.ion.ucl.ac.uk/spm) to 1) segment individual patient MRIs to gray, white, and CSF, 2) coregister PET to the individual MRIs, and 3) use individual MRIs to spatially transform these and the coregistered PET images into Montreal Neurologic Institute (MNI) standard stereotaxic space.

Transaxial planes of individual subject MRIs were oriented parallel to the AC-PC line. Integral images of [11C]PIB uptake were coregistered to their MRI counterparts using SPM99. Then, the individual 60 to 90′ uptake RATIO images were coregistered to the corresponding MRIs. Both coregistered RATIO images and

MRIs were subsequently spatially normalized to the T1 MRI template in MNI/ICBM152 space using the default settings in SPM99. MRIs were segmented into gray matter, white matter, and CSF using SPM99, and gray matter images thresholded at 50% probability. We convolved this binarised gray matter map with the latest version of a probabilistic brain atlas.[25] We then sampled [11C]PIB uptake RATIO images using Analyze AVW 6.1 in the following regions: frontal, temporal, and parietal association cortices, anterior and posterior cingulate gyrus, striatum, thalamus, and a cerebellar gray matter reference region (figure E-2). In addition, we examined hippocampus, amygdala, and parahippocampal gyrus, primary motor, primary sensory, and primary visual cortex.

Statistical parametric mapping of [11C]PIB-PET. Clusters of significant differences in mean 60- to 90-minute [11C]PIB region to cerebellar uptake ratios between 19 AD subjects and 14 control subjects were also localized at a voxel level using SPM99. Spatially normalized RATIO images were interrogated using a threshold of $p < 0.00001$ with an extent threshold of 200 voxels to detect significant change without applying analysis of covariance (ANCOVA) or proportional scaling. As [11C]PIB uptake was high in AD compared with the healthy control subjects SPM was not able to interrogate the parametric images at a lower threshold for significance. We subsequently used a primary motor, primary sensory, and primary visual cortical ROI mask to allow us to evaluate these regions with a lower statistical threshold for significance using SPM.

[18F]FDG-PET scans. All subjects with AD and healthy controls were scanned using a Siemens ECAT EXACT HR+ scanner as described above. Subjects were asked to fast for 4 hours before the bolus injection of 185 (±8) MBq of [18F]FDG. A 60-minute dynamic emission scan was acquired using predefined protocol with time frames 1 × 15s, 1 × 5s, 4 × 10s, 4 × 30s, 4 × 60s, 4 × 120s, and 9 × 300s. All subjects had radial artery cannulation. Continuous online sampling was performed for 15 minutes and then discrete blood samples were taken at baseline, 5, 10, 15, 20, 30, 40, 50, and 60 minutes. A hematocrit was estimated from the baseline blood sample and plasma glucose levels were measured on selected samples.

Analysis of [18F]FDG-PET. Parametric maps of absolute rCMRGlc were generated with spectral analysis using an arterial input function as previously described.[26,27] We used a lumped constant of 0.48. For ROI analysis of [18F]FDG scans all the individual images were coregistered to their corresponding MRIs and then normalized to MNI space as described above for [11C]PIB. Gray and white matter were combined when creating the object map and the regions were sampled in the similar way as for [11C]PIB. We interrogated function of the anterior and posterior cingulate cortex, thalamus, striatum, frontal, temporal, parietal, and occipital cortical regions. In addition we examined hippocampus, amygdale, parahippocampal gyrus, and also sampled primary motor and primary sensory cortex rCMRGlc.

Statistical parametric mapping of [18F]FDG-PET. A between group comparison of parametric rCMRGlc images of 12 AD and eight control subjects was performed employing SPM to localize significant changes in mean [18F]FDG uptake at a voxel level using a threshold of $p < 0.001$ with an extent threshold of 50 voxels. ANCOVA was applied to remove the confounding effects of global on regional uptake variance.

Statistical analysis. Statistical analyses were performed using SPSS for Windows version 12 (SPSS, Chicago, IL). Between-group regional differences were analyzed using Student t test. Individual AD subject values outside the control mean ± 2 SD were taken as statistically significant outliers. Correlations between regional [11C]PIB uptake with regional rCMRGlc were interrogated using Pearson's correlation. Whole cortical [11C]PIB and regional (posterior cingulate, frontal, temporal, parietal, and occipital) cortical [11C]PIB uptake were correlated with performance on neuropsychometric tests for the 18 subjects with AD using Spearman's rank correlation statistic. In 11 subjects with AD the regional cortical and hippocampal, amygdala, and parahippocampal rCMRGlc were correlated with neuropsychometric scores using Spearman's rank correlation. Colinearity between [11C]PIB imaging data and psychometric data were investigated using Partial Least Squares.[28] In short, the method uses singular value decomposition (SVD) to extract the factors of the cross-covariance matrix between ROI data and the psychometric scores.

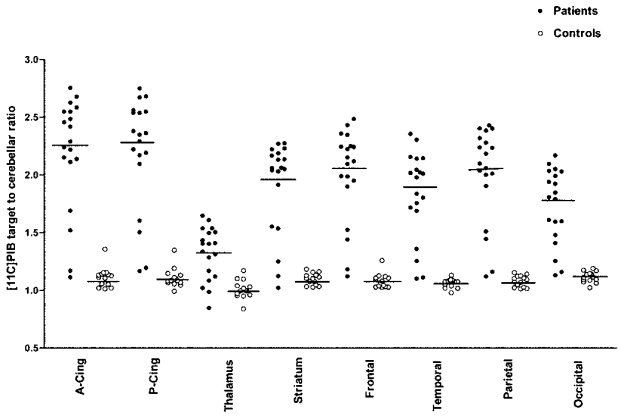

Figure 1. Comparison between mean target region:cerebellar 60 to 90 minutes. [11C]PIB RATIO between 19 subjects with Alzheimer disease and 14 controls. Shows anterior cingulate, posterior cingulate, thalamus, striatum, frontal, temporal, parietal, and occipital regions significantly increased ($p < 0.001$).

Factors consist of a numerical load for both ROIs and psychometric scores. To each factor, SVD associates a singular value. For the purposes of this analysis, singular values were used to calculate the percentage of variance explained by each factor and Morgera's covariance complexity.[29]

Results. *[11C]PIB-PET.* ROI analysis of [11C]PIB-PET data. Seventeen of the 19 (89%) subjects with AD showed ($p < 0.001$) raised [11C]PIB retention in association cortical and striatal areas in comparison to the healthy control group (figure 1). We found that levels of mean [11C]PIB uptake in AD hippocampus and amygdala were in the upper normal range while the parahippocampus showed a mild but significant 20% increase in [11C]PIB uptake in comparison to the control group. Primary cortical areas (motor, sensory, and visual cortex) showed around a 40% increase in amyloid load vs the control group (table 1), lower than the twofold increases seen in association cortical areas (figure 1).

Two of the 19 subjects with AD had regional [11C]PIB uptake that was within the range of control subjects. A 70-year-old woman (Case 1) was clinically diagnosed with AD 6 months before PET. The MRI showed mild cortical atrophy, but there was no significant hippocampal atrophy. This patient was reassessed 20 months later and [11C]PIB uptake was essentially unchanged, however, her behavioral performance had deteriorated. [18F]FDG-PET was normal on both occasions. The second patient (Case 2) was a 66-year-old man who was also clinically diagnosed with AD 6 months before PET. MRI showed generalized cortical atrophy but did not reveal significant hippocampal atrophy. His [11C]PIB uptake ratios at baseline were within two SD of the control mean. The neuropsychometric scores at the baseline and follow-up after 20 months were largely unchanged though some worsened or improved. His cingulate [11C]PIB uptake at 20 months had mildly increased: 1.40 in anterior cingulate gyrus (baseline = 1.17), 1.31 in posterior cingulate (baseline = 1.19), and was now above the normal range. He did not have baseline [18F]FDG-PET but a scan at 20 months showed a reduction in hippocampal rCMRGlc.

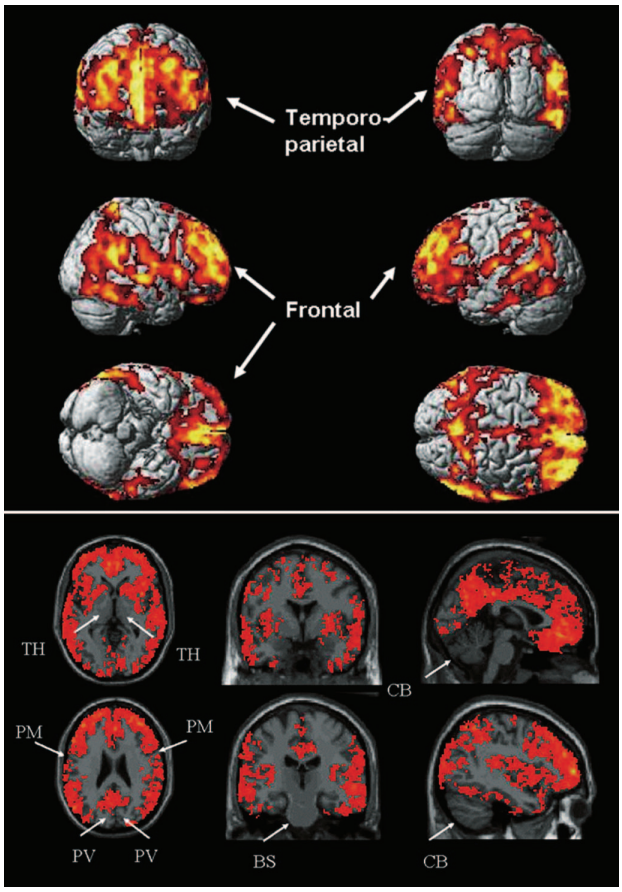

Figure 2. Localization of increased [11C]PIB uptake in Alzheimer disease compared with normal revealed by SPM, $p < 0.00001$. Primary motor (PM) and primary visual (PV) cortical areas, thalamus (TH), brainstem (BS), and cerebellum (CB) show no significant increase in PIB uptake compared with control subjects at that threshold.

Statistical parametric mapping of [11C]PIB-PET. SPM localized significantly increased mean [11C]PIB uptake in frontal, temporal, and parietal association areas and the striatum of the AD cohort in comparison to the control group. Primary motor, primary visual cortex, thalamus, and brainstem [11C]PIB uptake was not significantly raised at a threshold of $p < 0.00001$ vs the control group (figure 2). Using a mask to isolate primary motor, primary sensory, and primary visual areas [11C]PIB uptake was significantly raised at a threshold of $p < 0.0001$ in these regions.

[18F]FDG-PET. Analysis of [18F]FDG uptake. With ROI analysis, the AD group of 12 subjects showed mean rCMRGlc reductions of 23% in the posterior cingulate gyrus ($p < 0.0006$), 23% in the temporal cortex ($p < 0.0005$), 19% in the parietal cortex ($p < 0.0002$), and 17% in the occipital ($p < 0.007$) cortex compared to the control subjects (figure E-3). AD hippocampus showed a mean rCMRGlc reduction of 32% ($p < 0.001$) compared to the control group. AD amygdale showed a rCMRGlc reduction of 30% ($p < 0.001$), while parahippocampal gyrus showed a reduction of 27% ($p < 0.001$).

After normalization to whole brain glucose, posterior cingulate showed a relative reduction of 10.8% ($p < 0.008$), temporal cortex 10.6% ($p < 0.001$), and parietal cortex 5.9% ($p < 0.0003$) in AD subjects compared with healthy controls. SPM localized significant relative rCMRGlc decreases in temporoparietal and occipital regions in AD, but not in frontal regions (figure 3).

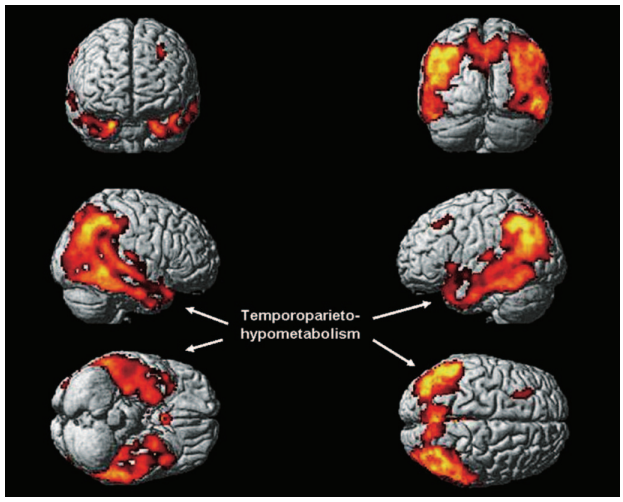

Figure 3. Reduction in temporoparietal glucose metabolism comparing 12 subjects with Alzheimer disease vs 8 controls in SPM ($p < 0.001$).

Individually, 10 of our 12 AD cases studied with FDG PET showed significant reductions in cortical rCMRGlc. Two cases, however, had normal levels of rCMRGlc, one of whom had raised and the other normal [11C]PIB uptake. A sub-analysis of hippocampus rCMRGlc showed individually decreased glucose metabolism in 9 of the 12 subjects. Those two who did not show decreased cortical hypometabolism also had normal hippocampal rCMRGlc. Primary motor and sensory cortex did not show a significant decrease in rCMRGlc in the subjects with AD. When individual rCMRGlc values were compared with [11C]PIB uptake ratios, lower rCMRGlc values correlated with higher [11C]PIB uptake ratios in temporal ($p = 0.047$, $r = -0.583$) and parietal ($p = 0.041$, $r = -0.595$) but not in frontal ($p = 0.998$, $r = 0.001$) cortical regions (figure 4).

Cognitive testing and [11C]PIB uptake in AD. The average neuropsychometry scores for the AD subjects and control subjects are detailed in table 2. Higher whole cortical [11C]PIB uptake correlated with lower scores on the Warrington short recognition memory test for words and faces. Amyloid load in frontal, temporal, parietal, and oc-

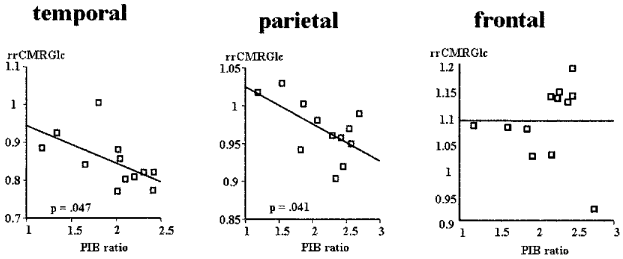

Figure 4. Higher [11C]PIB RATIO correlates with lower temporal and parietal rCMRGlc, while there is no correlation in the frontal region.

Table 2 *Memory tests of subjects with Alzheimer disease (AD) and control subjects*

	MMSE	Immediate recall	Delayed recall	WRMT words	WRMT faces	Forward digit span	Trail Making A (sec)	Trail Making B	Boston Naming Test	Rey Copy	Letter fluency (FAS)	Category fluency
Controls, mean (SD)	29.4 (1.2)	8.2 (0.9)	7.8 (1.4)	24 (1.3)	21.2 (1.2)	7.7 (2.5)	32.4 (9.7)	69.6 (27.5)	26.2 (2.3)	23.9 (0.3)	46.9 (13.2)	52.4 (12.7)
AD, mean (SD)	21.2 (3.9)	3.9 (1.7)	1.4 (2.6)	17.2 (3.5)	17.9 (3.2)	6.6 (1.7)	107 (81)	205 (112)	17.8 (6)	15 (3.5)	26.6 (11.8)	18.3 (11.1)
p Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	<0.001	<0.007	<0.01	<0.001

MMSE = Mini-Mental State Examination; WRMT = Warrington Recognition Memory Test.

cipital regions also correlated with performance on the Warrington short recognition memory tests for words and faces (table 3). Exclusion of the two AD subjects who had normal baseline levels of [11C]PIB uptake from the analysis abolished correlations between recognition memory scores and cortical amyloid load. Partial Least Square analysis revealed that the cross-covariance matrix had one dimension only (Morgera's Complexity 0.002) that consisted of one factor explaining 99% of the total covariance. This factor consisted of all sampled ROI and memory scores (short faces/short words). When the two subjects with AD with negligible PIB uptake were excluded, the amount of variance explained by the factor did not change significantly (94% of total covariance).

Relationship between cognitive testing and rCMRGlc in AD. We studied 11 subjects with AD. Levels of temporal lobe metabolism correlated with scores for the MMSE (Spearman's rho, $\rho = 0.717$, $p = 0.013$), immediate recall ($\rho = 0.801$, $p = 0.003$), category fluency test ($\rho = 0.695$, $p = 0.026$), and recognition memory for words ($\rho = 0.650$, $p = 0.030$). The hippocampal rCMRGlc correlated with immediate recall ($\rho = 0.723$, $p = 0.012$). Amygdale rCMRGlc correlated with the recognition memory for words ($\rho = 0.632$, $p = 0.037$). These correlations remained significant even after the exclusion of the one patient with AD with normal rCMRGlc levels.

Discussion. Our study demonstrates that uptake of the beta amyloid marker [11C]PIB is significantly increased in early AD vs healthy controls. This is consistent with findings reported in a previous study.[9] Individually, 17 of our 19 clinically probable AD subjects revealed an increased amyloid plaque load and the group showed mean 2- to 2.5-fold increases in association cortical area and cingulate gyri [11C]PIB uptake vs the controls. This magnitude of increase in signal suggests that [11C]PIB-PET should prove a sensitive diagnostic marker for AD.

A striking feature of [11C]PIB uptake in AD is the high frontal as well as temporoparietal signals. This pattern of [11C]PIB uptake has previously been described[9] and, in fact, is in keeping with the known pathologic distribution of beta amyloid in AD.[30] PIB is a neutral thioflavin which in AD brain slices shows nanomolar affinity for neuritic amyloid plaques but low affinity toward diffuse amyloid deposits and intracellular NFTs. Braak's pathologic studies have shown that the deposition of amyloid plaques in early AD takes place in both the basal frontal and temporal neocortex and then spreads to the adjoining neocortical areas and hippocampus.[30] It could be argued that relative sparing of frontal blood flow could contribute to the relatively raised [11C]PIB signal in AD. However, blood flow independent DV images of [11C]PIB uptake generated with Logan plots or compartmental analysis also show increased frontal amyloid making this explanation unlikely.[31]

The relatively low [11C]PIB uptake by the hippocampus, amygdala, and parahippocampus compared with cortical association areas in AD has not been previously reported. As we did not use a partial volume correction it could be argued that the low [11C]PIB binding in these areas in part reflects atrophy, however, this explanation cannot fully explain the low specific signal as we found a twofold increase in anterior cingulate amyloid load, a structure of similar volume. Relatively late deposition of amyloid in the hippocampus has been described in neuropathologic studies.[30] Our [11C]PIB and FDG PET findings coupled with neuropathologic observations are important as they suggest that amyloid deposition is not necessarily associated with neuronal dysfunction, as reflected by the reduced glucose metabolism in these areas, or impaired performance on tests of recall. This viewpoint is reinforced by the

Table 3 *Spearman's rho (ρ) correlation with [11C]PIB uptake and neuropsychometry*

	Posterior cingulate gyrus	Frontal	Temporal	Parietal	Occipital	Whole brain
WRMT words	$\rho = -0.455$	$\rho = -0.469$	$\rho = -0.494$	$\rho = -0.497$	$\rho = -0.529$	$\rho = -0.493$
	p = NS	$p = 0.050$	$p = 0.037$	$p = 0.036$	$p = 0.024$	$p = 0.038$
WRMT faces	$\rho = -0.355$	$\rho = 0.475$	$\rho = 0.469$	$\rho = -0.552$	$\rho = -0.523$	$\rho = -0.533$
	p = NS	$p = 0.046$	$p = 0.050$	$p = 0.017$	$p = 0.026$	$p = 0.023$

WRMT = Warrington Recognition Memory Test.

finding of increased amyloid load in frontal regions without associated reductions in glucose metabolism.

Graphical Logan analysis using an arterial plasma input function has been suggested to be the preferred method for [11C]PIB-PET analysis by Price et al.[31] A more simplified ratio method has also been evaluated against arterial plasma input dependent methods.[23] Target to cerebellum uptake ratios over 60 to 90 minutes provide a reliable method of analysis of [11C]PIB-PET scans, comparable results to Logan plot derived DVRs, and are simpler to generate.[23,31] We have previously reported that 60 to 90 minute uptake RATIOs correlate closely with DV ratios generated by both compartmental modeling and spectral analysis using arterial input functions.[24] The cerebellar time activity curves for [11C]PIB were not different between patient and control groups. The advantage of a 60 to 90′ RATIO method is that it potentially shortens the scan time and the analysis is simple.

To date, the use of statistical parametric mapping (SPM) to interrogate [11C]PIB-PET findings has not been reported. In AD use of SPM localized widespread significant increases in [11C]PIB uptake in frontal, temporal, and parietal association cortices and also in striatum. SPM is voxel based and makes no a priori assumptions about the locations of significant differences. It allows the entire brain volume to be interrogated and so can detect changes which may not be picked up by an ROI analysis which requires a predefined template. Compared with the control subjects SPM detected no significantly increased [11C]PIB uptake in the brainstem and thalamus of AD subjects. It also showed that, despite the significant 2- to 2.5-fold increases in [11C]PIB binding in frontal, temporal, parietal, occipital regions, the increases in amyloid load in primary cortical areas (motor and visual) in AD did not reach significance at a threshold of $p < 0.00001$. Use of this strict threshold allowed us to see which regions are maximally affected. However, when a lower threshold of $p < 0.0001$ was employed and primary motor, primary sensory, and primary visual cortex were isolated with a mask SPM localized a significant uptake in these regions consistent with the ROI analysis. This is in line with the pathologic studies that suggest relatively late involvement of these regions in AD.[32]

[18F]FDG-PET showed the classic AD pattern of temporo-parietal and posterior cingulate hypometabolism in our subjects.[33,34] We were also able to demonstrate significantly decreased hippocampal and amygdalae glucose metabolism in 75% of individual subject with AD. Even though we did not attempt a partial volume correction, hippocampal hypometabolism has been reported to be one of the earliest functional changes in AD and mild cognitive impairment.[35] Other groups have also reported reductions in hippocampal, amygdale, and posterior cingulate hypometabolism in AD.[36,37] Lesion studies have documented amnesia in subjects with damage to hippocampi.[38] The hippocampal, parahippocampal gyri and amygdale hypometabolism clearly demonstrates the involvement of the limbic cortex in AD. The reduced percentage reductions after normalization to global rCMRGlc are attributable to the globally decreased glucose metabolism in AD subjects compared with controls.

Along with only moderate increases in [11C]PIB uptake relative to association cortex, we found no significant reductions in rCMRGlc for the primary motor and sensory cortex rCMRGlc in AD compared with control subjects. There are differences in opinion concerning the involvement of the primary cortical areas in AD. Neuropathologic studies[30,32,39] have shown that in the preliminary stages of disease there is involvement of the basal forebrain, the pathology then spreading to cortical association and only finally to primary cortical areas.

In our study we demonstrated that 17 out of 19 subjects with AD individually had increased levels of association cortical [11C]PIB binding while 10 out of 12 subjects showed decreased temporo-parietal [18F]FDG uptake. After 20 months one of the two AD subjects with normal [11C]PIB uptake at baseline, a 70-year-old woman, continued to show no significant change on imaging but she had deteriorated clinically. The other case, a 66-year-old man, showed mildly increased cingulate [11C]PIB uptake on follow-up and reduced hippocampal rCMRGlc compatible with AD. He was started on the cholinesterase inhibitor donepezil and reported subjective improvement though still has poor recall.

None of our 14 control subjects had raised levels of [11C]PIB uptake. It has been reported that the proportion of subjects exhibiting incidental amyloid deposits and neurofibrillary changes rises with advancing age.[32] We presume that the lack of any significant uptake in our control subjects partly reflects their relatively young age (mean age 65).

Using neuropathologic confirmation as a gold standard, it has been reported that the sensitivity of a diagnosis of AD based on clinical criteria varies from 49 to 100% (average 81% across series) and specificity varies from 47 to 100% (average 70% across series).[40] Pathologic studies have confirmed that it is possible to have significant memory problems without substantial plaque and tangle load—especially in more elderly subjects.[6,41] These cases without significant plaque and tangle load presumably have mechanisms other than amyloid deposition underlying their memory impairment. Although we need pathologic confirmation for a definitive diagnosis, clinically our two [11C]PIB-PET negative subjects at baseline fulfilled the NINCDS-ADRDA criteria for a clinical diagnosis of AD and one of them now shows [11C]PIB PET findings compatible with early disease.

In our study we found a correlation between the amyloid deposition measured with [11C]PIB PET and reduced resting glucose metabolism reflected by [18F]FDG uptake in temporal and parietal regions while there was a lack of correlation between

frontal amyloid load and metabolism. According to Braak staging frontal neurofibrillary tangles are formed relatively late in the disease process whereas frontal amyloid is found much earlier. [18F]FDG-PET reflects neuronal synaptic function and so probably is influenced more by intraneuronal tangle than extracellular plaque formation. This dissociation between amyloid load and glucose metabolism again raises the question about the role of plaque formation in the destruction of neurons.

Though the correlation between impaired performance on recognition memory tests for words and faces and cortical [11C]PIB uptake suggest that amyloid load contributes to cognitive impairment, the loss of this correlation on withdrawing the AD subjects with normal baseline [11C]PIB PET suggests that amyloid deposition alone is unlikely to explain memory difficulties. Pathologic studies on Down syndrome cases suggest that amyloid deposition may take place early in the disease process before neuronal damage and dementia occur.[2] It is also reported that in neuropathologic studies there is stronger correlation between degree of dementia and neurofibrillary tangles density than amyloid plaque load.[41,42] It is conceivable that amyloid deposition occurs alongside or before the intracellular processes that lead to cognitive difficulties. This viewpoint is reinforced by the stronger correlation of recognition with temporal cortical hypometabolism which survived removal of an AD case with normal FDG uptake. [18F]FDG-PET reflects the functional integrity of synapses rather than extracellular protein aggregation. Longitudinal [11C]PIB and [18F]FDG-PET studies of healthy controls and subjects with very mild memory problems will be necessary to further establish the exact relationship between amyloid plaque deposition and loss of neuronal synaptic function in AD.

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ORIGINAL ARTICLE

Posterior parietooccipital hypometabolism may differentiate mild cognitive impairment from dementia in Parkinson's disease

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Abstract
Purpose Patients with Parkinson's disease (PD) may have normal cognition, mild cognitive impairment (MCI) or dementia. We investigated differences in cerebral metabolism associated with these three cognitive states and the relationship between metabolism and cognitive dysfunction.
Methods FDG PET and a battery of neuropsychological tests were used to study PD patients with dementia (n=19), MCI (n=28) and normal cognition (n=21), and control subjects (n=20). Regional glucose metabolism in patients and controls was analysed using statistical parametric mapping (SPM8) corrected for age, motor severity and depression. Correlations between the mini-mental state examination score and Z-score values of the different cognitive domains with respect to cerebral FDG uptake were assessed using SPM8.
Results PD patients with MCI (PD-MCI patients) exhibited decreased FDG uptake in the frontal lobe, and to a lesser extent in parietal areas compared with cognitively normal patients. Patients with dementia showed reduced metabolism in the parietal, occipital and temporal areas and a less extensive reduction in the frontal lobe compared with PD-MCI patients, while widespread hypometabolism was seen in comparison with patients with normal cognition. PD-MCI patients exhibited reduced FDG uptake in the parietal and occipital lobes and in localized areas of the frontal and temporal lobes compared with controls, whereas patients with dementia showed a widespread reduction of cortical metabolism. Mini-mental state examination score correlated positively with metabolism in several lobes, executive function with metabolism in the parietooccipitotemporal junction and frontal lobe, memory with temporoparietal metabolism,

David Garcia-Garcia and Pedro Clavero contributed equally to this work.

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visuospatial function with occipitoparietal and temporal metabolism, and language with frontal metabolism.
Conclusion PD patients with MCI exhibited hypometabolism in several cortical regions compared with controls, and in the frontal and parietal regions compared with cognitively normal patients. Hypometabolism was higher in patients with dementia than in those with MCI, mainly in the posterior cortical areas where it was correlated with visuospatial, memory and executive functions.

Keywords Parkinson's disease · Mild cognitive impairment · PET · Cerebral metabolism · Dementia

Introduction

Cognitive impairment is a frequent comorbidity in Parkinson's disease (PD), with a reported dementia prevalence of up to 80 % in long-term longitudinal studies [1, 2]. Mild cognitive impairment (MCI) is defined as a cognitive decline that is not normal for age but in which essentially normal functional activities can be maintained [3–6]. This condition is also common in PD and is considered a risk factor for the development of dementia [7]. As yet, the pattern of progression of the cognitive decline from MCI to dementia in PD patients has not been well defined, and longitudinal studies addressing the neuropsychological predictors of dementia in PD have yielded inconsistent results [6–9]. However, a longitudinal study on early PD concluded that patients with deficits in tasks with a more temporal and parietal lobe involvement ("posterior cortical" dysfunction) have a higher risk of developing dementia [10]. Similar results were found in a cross-sectional study assessing the cognitive changes characterizing the transition from MCI to dementia in PD [11]. In keeping with this, a recent longitudinal study involving FDG PET showed that patients who develop dementia have reduced baseline FDG uptake in the visual association area and posterior cingulate cortex [12].

Cross-sectional studies with FDG PET have revealed that dementia is associated with widespread areas of cortical hypometabolism [13–19], while in PD patients with MCI (PD-MCI patients), hypometabolism appears to be more localized to the temporoparietooccipital junction and the frontal cortex [18–20] compared with healthy controls. In addition, PD-MCI patients show reduced FDG uptake in the frontal and parietal regions with respect to cognitively normal PD (PDCN) patients [19, 21]. However, the metabolic changes that distinguish PD-MCI patients from PD patients with dementia (PDD) have not been studied as yet.

We hypothesized that PDD patients would have greater hypometabolism in posterior cerebral areas than PD-MCI patients. Here, we describe patterns of cerebral metabolism in PD-MCI patients compared with PDD patients and with PDCN patients. Our aim was to identify metabolic differences between the cognitive states in PD, specifically between dementia and MCI. We also report the correlations between cerebral metabolism and cognitive status in specific cognitive domains.

Material and methods

Subjects

A cross-sectional study was conducted in patients with PD diagnosed according to the UK Parkinson's Disease Society Brain Bank criteria [22] who were consecutively recruited from the Movement Disorders Unit of the Clinica Universidad de Navarra. Patients over 60 years of age and with a disease duration of at least 10 years were included, as this profile best represents the PD population with the highest risk of cognitive decline [23]. Exclusion criteria were other brain disorders, abnormal findings on MRI (i.e. tumour, hydrocephalus or severe vascular lesions), severe systemic disease, major psychiatric illness, prior cerebral surgery, abnormalities in thyroid function, positive VDRL test and low levels of vitamin B12 or folic acid. Healthy controls were recruited from among members of the Association of Blood Donors of Navarra (Spain). Controls with any history of neurological, psychiatric or major medical illness, memory complaints, scores below normal in the neuropsychological assessment or with MRI abnormalities were ruled out. The Ethics Committee for Medical Research of the University of Navarra approved the study, and all patients, or their legal representatives, and controls provided informed consent to participate in the study.

Motor assessments

The motor state in PD patients was assessed using the Hoehn and Yahr scale and the motor section of the unified Parkinson's disease rating scale (UPDRS-III) in the "off" (minimum of 12 h without anti-parkinsonian medication) and "on" states. Drug intake was recorded and dopaminergic treatment calculated in levodopa equivalents (Table 1).

Neuropsychological assessment

Global cognitive function was evaluated with the mini-mental state examination (MMSE) [24]. The Interview for Deterioration in Daily Living in Dementia (IDDD) scale [25] was used to assess functional independence. Depression was rated using the Geriatric Depression Rating Scale (GDS) of Yesavage et al. [26]. Different cognitive domains (verbal and visual memory, attention and executive function, language and visuospatial function) were evaluated using a battery of neuropsychological tests [27]. Memory was assessed using the Free and Cue Selective Reminding test of Buschke [28], the Cerad word list, and the delayed recall of two simple figures (Massachusetts General

Table 1 General features of the study groups

	Control (n=20)	PD (n=68)	PDCN (n=21)	PD-MCI (n=28)	PDD (n=19)
Age (years), mean (SD)	67.9 (3.1)	70.6 (6.4)	67 (7.1)	71.5 (3.8)[b]	73.1 (7.1)[a,b]
Male gender, n (%)	11 (55)	37(54.4)	15 (71.4)	14 (50)	8 (42.1)
Disease evolution (years)	–	13,6 (5.1)	12.4 (3.8)	14.1 (6)	14.3 (5.1)
UPDRS III "on", mean (SD)	–	20.8 (10.6)	16.4 (7.1)	17.7 (9.1)	30.8 (10.2) [c,e]
UPDRS III "off", mean (SD)	–	37.9 (12.4)	32.3 (8.4)	33.2 (13.3)	49.4 (10.3) [b,d]
Levodopa equivalents (mg/day), mean (SD)	–	1147 (585.7)	1062 (347.2)	1249 (700.8)	1088 (616.5)
GDS score, mean (SD)	4.4 (4.1)	9.9 (5.2)[a]	7.8 (5.2)	9.9 (4.9)[a]	12.8 (5.9)[a,b]
Hallucinations, n (%)	–	18 (26.5)	2 (9.5)	5 (17.8)	11 (57.9)[c,e]
Hoehn and Yahr scale score, mean (SD)	–	3 (0.8)	2.6 (0.6)	2.9 (0.7)	3.7 (0.7) [c,e]
Education (years), mean (SD)	9.8 (3)	10.2 (3.2)	11.7 (3.6)	9.9 (3.1)	9 (2.3)

[a] $p<0.001$ vs. control group
[b] $p<0.05$ vs. PDCN
[c] $p<0.001$ vs. PDCN
[d] $p<0.05$ vs. PD-MCI
[e] $p<0.001$ vs. PD-MCI

Hospital, Boston). Other tests used were the Raven's Progressive Matrices, semantic (animals) and phonetic (words starting with "p") verbal fluency [29], Trail Making Test parts A and B, the Stroop test and Digit Span Forward and Backwards task for attention and executive functions. The Boston naming test and verbal fluency were evaluated for language, and the copying of two simple figures and the two intersecting pentagons of the MMSE were used for testing visuospatial function. All tests were applied by two members of the team to control subjects and patients under treatment, and were used alongside the diagnostic criteria to diagnose PD patients as being cognitively normal, as having MCI or as having dementia.

Criteria for diagnosing cognitive status

The clinical diagnostic criteria for dementia in PD [30] were applied to diagnose dementia in the present study. MCI was diagnosed in nondemented patients when the following two features were present: (1) cognitive decline was reported by either the patient or informant, or observed by the neurologist, but the decline did not interfere significantly with the functional independence of the patient; (2) the patient scored more than 1.5 standard deviations below control values in at least two tests in the neuropsychological battery, either within a single cognitive domain or across different cognitive domains [31]. Values used to determine test score deviations in PD patients were taken from a sample of 20 age- and education-matched healthy control subjects. Individual neuropsychological test scores were transformed into Z-scores using the mean and standard deviation of the control sample according to the following formula: (test score − median score from control sample)/standard deviation from control sample. Single-domain PD-MCI was diagnosed when abnormalities (the two abnormal tests) were present in a single cognitive domain. Multiple-domain PD-MCI was diagnosed when abnormalities were present in at least one test in two or more cognitive domains. In addition, to correlate the cognitive state with FDG uptake, the Z-score for the different domains was calculated from the average of the Z-scores of the tests assessing each domain. Patients not fulfilling criteria for MCI or dementia were considered to have cognitively normal PD.

FDG PET

Image data acquisition

Patients were studied in the "on" pharmacological condition (i.e. under the effect of their usual anti-parkinsonian dopaminergic medication). Central nervous system depressant drugs such as benzodiazepines, neuroleptics or antidepressive treatments were withdrawn according to their pharmacological kinetics. Additionally, subjects fasted overnight before PET scanning. Before injection of the radiopharmaceutical, blood glucose was checked and was <120 mg/dL in all patients. After a few minutes of rest in silence and with dimmed lighting, ^{18}F-FDG (370 MBq) was injected intravenously, and subjects were required to rest for 40 min in the supine position on the PET scanner bed with their eyes closed. Then, 74 planes (128×128 matrix) were acquired with a voxel size of 2.06×2.06×2.06 mm during a 20-min scan using a Siemens ECAT EXAT HR+ scanner (Siemens, Knoxville, TN). A transmission scan in 3D mode for attenuation correction was performed at the end of the acquisition

period [32]. Images were reconstructed by means of a filtered back-projection method using ECAT software (version 7.2; Siemens).

Data analysis

Data were processed using statistical parametric mapping (SPM8) software (Wellcome Department of Neurology, London, UK) implemented in Matlab 7.13 (MathWorks Inc. Sherborn, MA). First, we created a customized FDG PET template using data from the control sample (n=20). For this purpose, all control subjects were scanned with a 1.5-T Siemens Symphony system using a three-dimensional T1-weighted gradient-echo sequence (acquisition parameters: coronal acquisition, TR/TE/TI 1,900/3.36/1,100 ms, flip angle 15°, 144 slices, FOV 187×250 mm, matrix 192×256, voxel size 0.98×1.6×0.98 mm). Thus, control FDG PET images were coregistered with their corresponding MR images. MR images were segmented using the SPM8 segmentation tool [33] in MATLAB 7.0. Grey matter (GM) and white matter templates were generated from the entire image dataset using the DARTEL technique [34]. After an initial affine registration of the GM DARTEL templates to the tissue probability maps in Montreal Neurological Institute (MNI) space [35], nonlinear warping of the GM images was performed to normalize them onto the MNI space. The spatial normalization parameters of each MR image were then applied to each corresponding coregistered FDG PET image. The FDG PET template was obtained by averaging the spatially normalized PET images and smoothing using an isotropic gaussian filter with a full-width at half-maximum of 8 mm.

All FDG PET images were spatially normalized into a standard stereotactic MNI space using the customized FDG template. For every spatially normalized PET image, voxel values were normalized to pons activity (becquerels per centimetre cubed) using the pons volume of interest (Nifti format) from WFU PickAtlas v3.0 [12, 36–38]. Finally, the resulting PET scans were smoothed with an isotropic gaussian filter with a full-width at half-maximum of 8 mm. Changes in metabolism were assessed by analysis of the preprocessed images using one-way analysis of variance. Age and GDS score were included as covariates for the metabolism comparison between controls and patients, while for the metabolism comparison between the different groups of patients, age, UPDRS-III and GDS scores were included as covariates. Significance was set at p<0.05 and corrected for multiple comparisons, i.e. a false discovery rate (FDR) with a cluster size of >20 voxels. In the comparison between PD-MCI and PDCN patients in which less significant differences would be expected, significance was set to p<0.001 uncorrected, similar to previous works in the field [18, 19]. The correlation between the MMSE, UPDRS-III, GDS scores and Z-scores of the different cognitive domains and glucose metabolism was assessed in PD patients using regression analysis and significance set at p <0.001 uncorrected, with a cluster size of >20 voxels.

The coordinates of the voxel peaks were transformed into Talairach space using the mni2tal program by Dr. M. Brett (http://imaging.mrc-cbu.cam.ac.uk/imaging/MniTalairach) and their anatomical locations were found using Talairach Daemon Client [39].

Statistics

Differences in the demographic and clinical characteristics between the PD groups and controls were analysed using Fisher's exact test in cases of categorical variables, analysis of variance with post-hoc Bonferroni's multiple comparison in cases of continuous, normally distributed variables, and the Kruskal-Wallis and Mann-Whitney U tests for continuous, nonparametric variables. The normality of the distributions of clinical and demographic variables was assessed using the Kolmogorov-Smirnov test. A value of p<0.05 was considered to indicate statistical significance.

Results

Clinical data

The subjects included 20 controls and 68 PD patients (21 PDCN, 28 PD-MCI, and 19 PDD). The demographic and clinical characteristics of all groups are summarized in Table 1. With the exception of a higher GDS score, PD patients did not differ from control subjects. PDD patients were older than controls and PDCN patients. They also had higher GDS scores than PDCN patients, and had more severe parkinsonism (UPDRS and Hoehn and Yahr scores) and more hallucinations than PDCN and PD-MCI patients. The PD-MCI patients were older than PDCN patients, with no other differences in clinical features.

Compared with the controls and PDCN patients, PDD patients had poorer scores in all neuropsychological tests, while with respect to PD-MCI patients, they had poorer scores in all but the recall of figures and word delayed recall tests (Supplementary Table 1). PD-MCI patients in turn had lower scores than PDCN patients for all tests, with the exception of the Buschke and the copying of simple figures and intersecting pentagon tests. The cognitive domains affected in PD-MCI patients were as follows: three patients (10.7 %) had only the executive domain affected; 14 patients (50 %) had two domains affected (executive and memory in nine patients, executive and visuospatial in four patients, executive and language in one patient); six patients (21.4 %) had three domains affected (executive, memory

and language in five patients, and executive, visuospatial and memory in one patient); and five patients (17.4 %) had four domains affected. No differences were found between controls and PDCN patients (Supplementary Table 1).

Regional differences in FDG PET

Comparison between PD groups

PDD patients had extensive bilateral areas of reduced FDG uptake in the frontal, parietal, occipital and temporal lobes and in the posterior cingulate cortex compared with PDCN patients (Fig. 1A). PDD patients had a lower metabolism mainly in posterior brain areas (parietal, occipital and temporal lobes) than PD-MCI patients, and also, albeit to a lesser extent, in the right frontal lobe (Fig. 1B; Supplementary Table 2). Compared with PDCN patients, PD-MCI patients did not exhibit regions of reduced metabolism. However, using a relatively lower conservative threshold ($p<0.001$ uncorrected), PD-MCI patients showed hypometabolism that was mainly localized in the left frontal lobe and to a lesser extent in the left parietal lobe (Fig. 1C; Supplementary Table 2). PDCN patients did not show reduced FDG uptake in any region compared with PDD and PD-MCI patients. Likewise, PD-MCI patients did not show reduced FDG uptake in any region compared with PDD patients.

Comparison between PD groups and controls

As expected, PDD patients showed an extensive bilateral reduction in FDG uptake in the frontal, parietal, occipital and temporal lobes, in the anterior cingulate cortex, and in the caudate nucleus compared with controls (Fig. 2A; Supplementary Table 3). In PD-MCI patients, more localized hypometabolic areas were identified in the parietal (mainly in the angular gyrus) and occipital lobes, and to a lesser extent in the frontal and temporal lobes (Fig. 2B; Supplementary Table 3). PDCN patients did not show hypometabolic areas compared with controls. No regions of reduced metabolism were identified in the control subjects compared with the PD patients.

Correlation between cerebral metabolism and cognitive state in PD patients

A positive correlation between FDG uptake and MMSE score in all PD patients was observed for uptake in the parietal, occipital, temporal and frontal lobes, and in the anterior cingulate cortex and caudate nucleus using GDS and UPDRS-III scores and age as nuisance variables (Fig. 3). In addition, there were positive correlations between the Z-score of cognitive domains and FDG uptake as follows: executive function in the parietal, frontal and occipitotemporal junction; memory with temporal and parietal regions; visuospatial function with posterior areas (occipitoparietal and temporal) uptake; and language with anterior areas mainly the frontal lobe (Fig. 4). No correlation between the GDS score and FDG uptake was observed.

Regions with hypermetabolism and clinical correlation

Compared with control subjects, PD patients exhibited increased metabolism in the putamen, thalamus and cerebellum and in the motor cortical (paracentral gyrus) areas bilaterally, but there were no differences among the PD

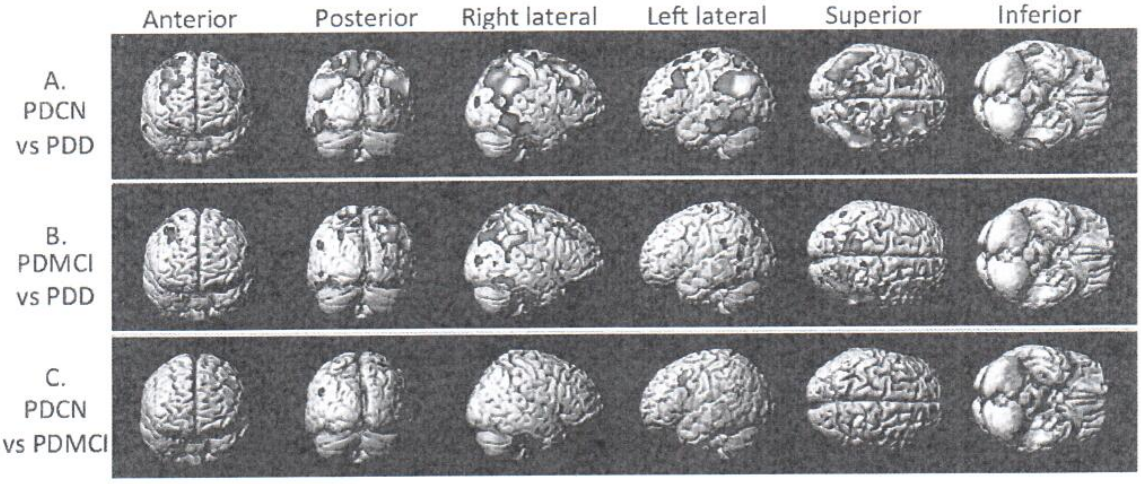

Fig. 1 Regions with reduced metabolism comparing PDD, PD-MCI and PDCN patients: *A* PDD<PDCN, *B* PDD<PD-MCI, *C* PD-MCI<PDCN ($p<0.05$ FDR corrected for *A* and *B*; $p<0.001$ uncorrected for *C*; age, GDS and UPDRS III score as covariates in all comparisons)

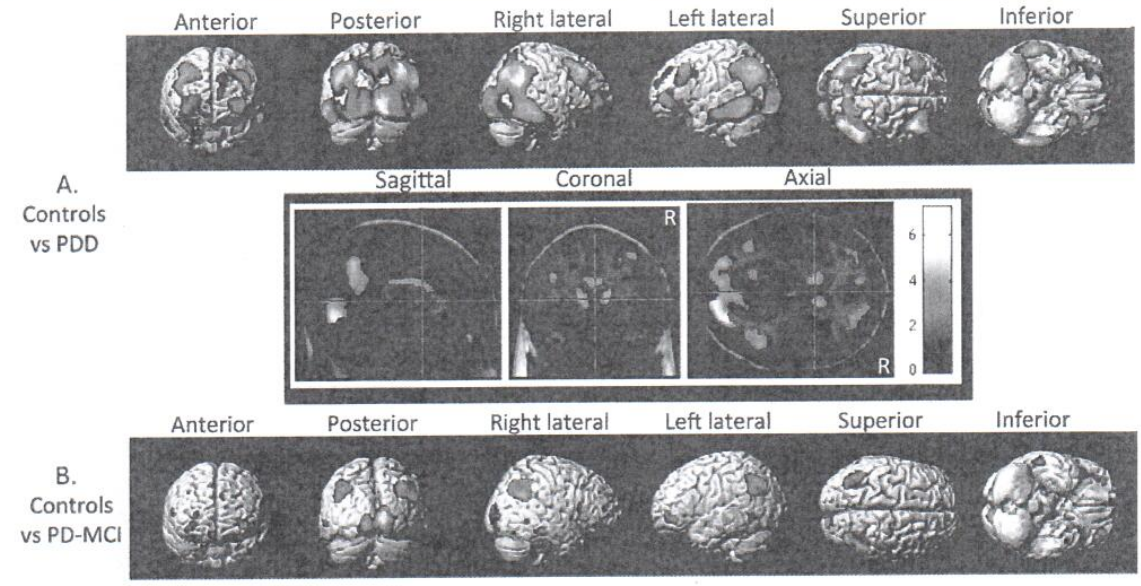

Fig. 2 Regions with reduced metabolism comparing PDD patients and PD-MCI patients with respect to control subjects: *A* PDD<controls, *B* PD-MCI<controls ($p<0.05$ FDR corrected; age and GDS score as covariates)

groups (Fig. 5A–C). Moreover, FDG uptake in cortical areas was positively correlated with the UPDRS-III score but there was no correlation with the MMSE score (Fig. 5D).

Discussion

We compared cerebral FDG uptake in PDCN, PD-MCI and PDD patients, and control subjects. A major finding was that with respect to PDCN patients, PD-MCI patients showed a reduction in metabolism that predominated in the frontal lobe and to a lesser extent in the parietal lobe. In contrast, hypometabolism in PDD patients compared with PD-MCI patients was mainly located in posterior brain regions (parietal, occipital and posterior temporal areas) and to a lesser extent in the frontal lobe. We also found that, compared with controls, PDD and PD-MCI patients shared a common pattern of reduced metabolism in the parietal and occipital lobes, and to a lesser extent in the frontal and temporal lobes. However, in PDD patients the cortical

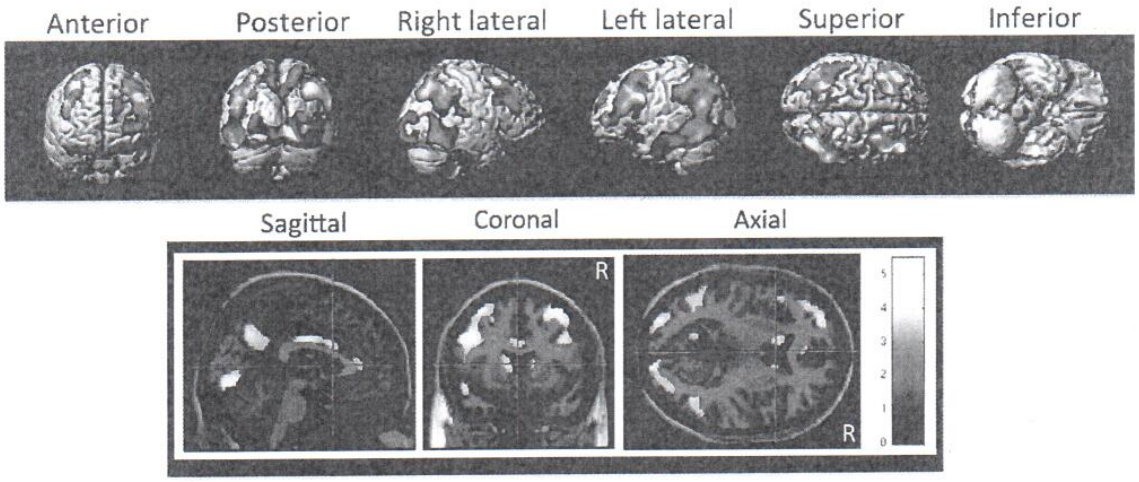

Fig. 3 Positive correlations between MMSE score and FDG uptake in all PD patients ($p<0.001$ uncorrected; age, GDS and UPDRS-III as covariates)

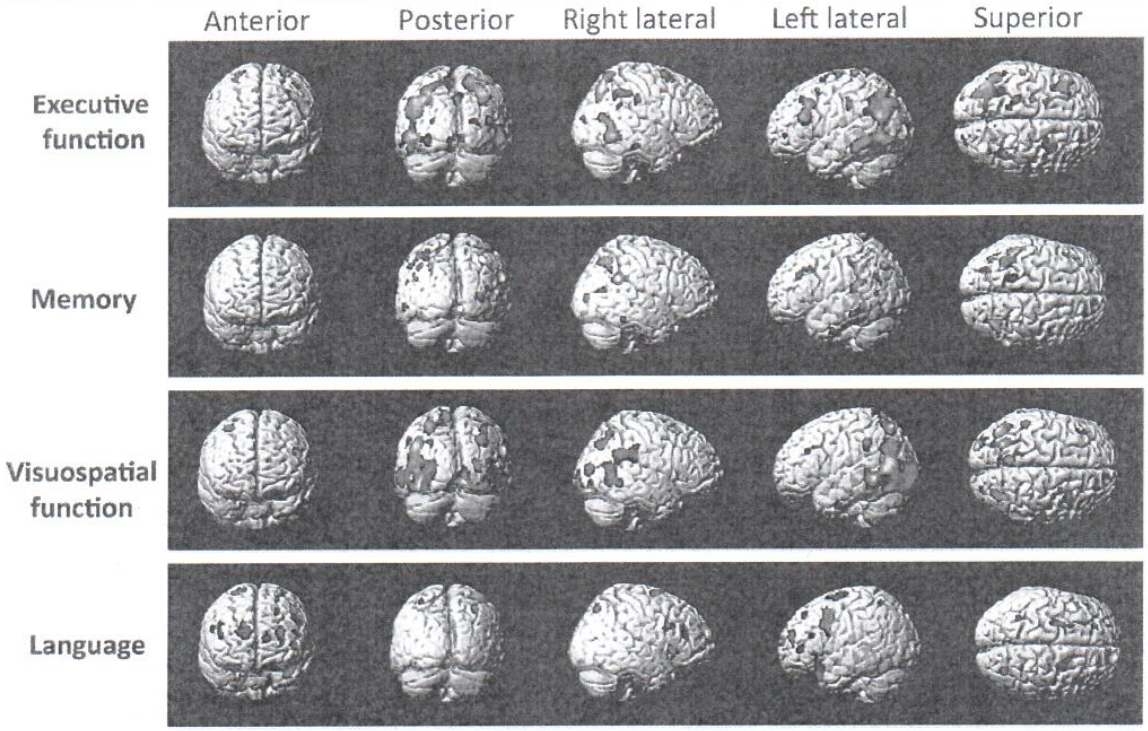

Fig. 4 Positive correlations between the Z-score of cognitive domains altered in PD patients and FDG uptake

hypometabolism was more widespread affecting wider cortical and subcortical areas compared to that seen in control subjects. Taken together, our data suggest that dementia in PD is characterized by a more intense and widespread cerebral hypometabolism than MCI in PD patients and that this hypometabolism predominates in posterior cortical areas. We also found that deficits in different cognitive domains in PD were associated with reduced cerebral metabolism involving different brain regions. Thus, our results further define aspects of cerebral metabolism associated with MCI and dementia in PD.

Most previous studies have focused on comparing the cerebral metabolism of PD patients with that of control subjects [13–17, 20], but putative distinctive features among the different cognitive states in PD have been poorly elucidated. While a reduction in FDG uptake in the posterior and frontal cortices of PD-MCI patients compared with PDCN patients has been identified in some studies [18, 19, 21], no study has been carried out to compare differences between PD-MCI and PDD patients. A cross-sectional study [11] demonstrated that dementia differs from MCI by both a generalized failure in executive function and the addition of "posterior cortical dysfunction" (naming and clock copy tests). Further to this, the Cambridge longitudinal study showed that PD patients with deficits in tasks revealing a predominant temporal and parietal lobe ("posterior cortical") dysfunction have a higher risk of dementia than those with only a frontal executive dysfunction [10]. In keeping with this, a recent longitudinal study showed that patients who develop dementia after 3.9 years of follow-up have a low performance in delayed visual reproduction learning and a reduced FDG uptake in the visual association and posterior cingulate cortex at baseline compared to controls [12]. In addition, hypometabolism in the parietooccipitotemporal and medial temporal brain has been correlated with visuospatial and mnemonic functioning in PD patients [40]. Here we report that PDD patients have reduced FDG uptake compared with PD-MCI patients mainly in the parietal, occipital and posterior temporal areas, supporting the notion that a cognitive deficit based on posterior cortical function (i.e. visuospatial and memory) is the main difference between the two cognitive states.

We also found that PD-MCI patients exhibited a reduction in metabolism in the frontal and parietal lobes compared with PDCN patients. Previous FDG PET studies have shown similar results [19] or more extensive hypometabolism in the posterior cortex [18, 21]. The discrepancy is probably due to the different criteria used for the diagnosis of MCI. For example, when a clinical scale (the clinical dementia rating scale) for staging the severity of dementia was used

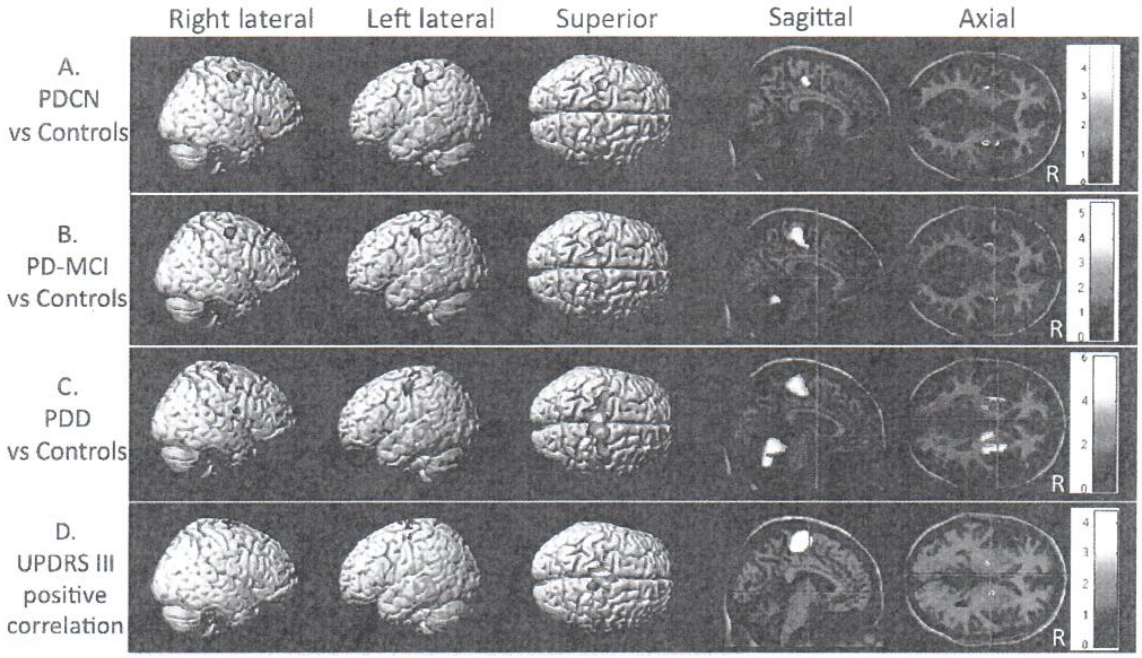

Fig. 5 Regional increases in metabolism comparing PDD, PD-MCI and PDCN patients with respect to control subjects: *A* PDCN>controls; *B* PD-MCI>controls; *C* PDD>controls ($p<0.05$ FDR corrected; age and GDS score as covariates). *D* Positive correlation between UPDRS III score and FDG uptake ($p<0.001$ uncorrected)

and MCI was diagnosed for a score of 0.5, corresponding to very mild dementia, patients with MCI had more extensive hypometabolism in the posterior cortex than PDCN patients [18]. In a similar manner to Huang et al. [19], we used a more stringent diagnostic criterion based on 1.5 standard deviations in neuropsychological test scores with respect to control subjects' scores. This approach probably resulted in the classification of PD-MCI patients with lower levels of cognitive deficits. Consequently, these data also reinforce the association between more severe cognitive deficits and a higher level of posterior cortical hypometabolism.

It should be noted that the diagnostic criteria for MCI are still under development, and MCI in PD requires further definition [31]. Currently, MCI in PD includes different cognitive abnormalities depending upon the number and type of cognitive domains affected. As yet, whether a given subtype of MCI in patients with PD might confer a higher risk of developing dementia has not been clarified. A single prospective study in a small number of patients showed that single and multiple-domain non-amnestic forms of MCI were more associated with the development of dementia 4 years later [7]. Although ongoing longitudinal studies will eventually clarify this point, it is probable that PD patients with multiple-domain MCI have a more severe or advanced cognitive decline than those with single-domain forms, and therefore are at a higher risk of developing dementia. In this sense, previous cerebral FDG PET studies did not highlight differences between PD patients with single-domain MCI and those with normal cognition. In contrast [19, 21], patients with multiple-domain MCI showed reduced metabolism in the frontal and parietal lobes, and less consistently in the temporal lobe than PDCN patients [18, 19, 21]. In the present study, all but three patients with PD-MCI had a multiple-domain type of MCI, giving more consistency to the differences found in cerebral metabolism underlying each cognitive state in patients with PD [10, 11].

We have also demonstrated a relationship between metabolic findings and cognitive state given the correlations observed between the severity of the global and cognitive domain deficits measured by MMSE and the corresponding Z-scores, respectively, and regions of reduced metabolism in PD patients after correcting for age, depression (GDS score) and motor severity (UPDRS-III). We found that executive function mainly correlated with metabolism in the parietooccipitotemporal junction and frontal lobe, while memory correlated with metabolism in the temporal and parietal regions, and visuospatial function correlated with posterior areas (occipitoparietal and temporal). In contrast, language was correlated with metabolism in anterior (mainly frontal) areas. These results are in keeping with those of previous studies in PD patients showing that bilateral hypometabolism in the frontal and parietal regions and in the parietooccipitotemporal and

medial temporal brain correlate with executive dysfunction [41–45] and visuospatial and mnemonic functioning, respectively [40]. Although partially limited by the lack of data in normal individuals, the correlations reported here also indicate that the higher posterior hypometabolism in PDD with respect to PD-MCI patients is related to a worsening of executive dysfunction and to the addition of visuospatial and memory deficits.

This was a cross-sectional study seeking to identify metabolic differences between PDD and PD-MCI patients. Considering that MCI forms part of the cognitive decline preceding the development of dementia, only large longitudinal studies will allow a better definition of clinical MCI and of the changes that characterize the transition from MCI to dementia. Our findings therefore require confirmation in prospective studies with a larger number of patients. Nevertheless, we have studied a large number of PD patients considered to be at high risk of developing dementia [23]. Indeed, it has been reported that the development of substantial abnormalities in the defined cognitive network expression in PD takes places by the end of the first decade following clinical onset [14]. Patients in our study were studied while under dopaminergic treatment, but the doses were not different between the different groups and it is known that dopaminergic drugs do not have a significant impact on the pattern of cognitive expression detected in FDG PET [14, 41]. Moreover, there were no differences in other treatments that could have interfered with the results; for example, only three PDD patients [46] were receiving treatment with cholinesterase inhibitors, which would have increased the FDG uptake [46].

The disease duration was not different among the groups, but one limitation of this study is that, due to the natural course of the disease and the age at which dementia most frequently occurs, PDD patients exhibited a greater degree of motor disability than patients in the other groups, were older on average and had higher depression scale scores than PDCN patients and controls [16, 17, 47–50]. It should be noted that the metabolic pattern related to motor aspects is different from that related to cognition [14]. In addition, we did not identify any correlation between depression score and cerebral metabolism. However, the data were corrected for age, motor severity and depression, and therefore we believe the results would not have been significantly affected by these factors. Further to this, the validity of our data is reinforced by the fact that the metabolic patterns in the PD groups studied here in comparison with control subjects are similar to those reported in the literature [13–18, 51]. Moreover, the subcortical (putamen and thalamus) and motor cortical (paracentral gyrus) hypermetabolic areas encountered in all groups of PD patients were also in keeping with the PD-related motor pattern [52, 53], and actually correlated positively with the UPDRS-III score. In addition, we used a more advanced version of the software for image analysis (i.e. SPM8) and corrected our data more thoroughly than in previous studies (FDR corrected at $p<0.05$). Admittedly, as a result of the use of this conservative threshold, PD-MCI patients did not show regions of reduced metabolism compared with PDCN patients. Thus, differences between PD-MCI and PDCN patients were obtained only with the less-conservative analysis (uncorrected $p<0.001$). However, the metabolic differences previously reported between these two groups of patients (PD-MCI and PDCN) have also been obtained with uncorrected data [18, 19, 21].

Conclusion

Our study demonstrated that PD-MCI patients exhibited hypometabolism (decreased FDG uptake) in numerous cerebral areas compared with controls, and in the frontal and parietal regions compared with PDCN patients. In contrast, dementia in PD was characterized by a more expansive cerebral hypometabolism than MCI, with predominance in the posterior cortical areas. The reduction in FDG uptake in these posterior areas correlated with poorer outcomes in visuospatial, memory and executive functions. Taken together, these results indicate that dementia in PD is associated with a worsening of executive dysfunction along with an impairment of visuospatial and memory function.

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Conflicts of interest Maria C. Rodriguez-Oroz is on the advisory board of UCB Spain. She has received payment for lectures, as well as travel and accommodation to attend scientific meetings from GlaxoSmithKline, UCB, Lundbeck and Medtronic. She has received research funding from national and regional government bodies in Spain. Jose Obeso has served previously on the Advisory Board of GSK (UK), and received honorarium for lectures given at meetings organized by GSK (Spain), Lundbeck-TEVA and UCB. Grants/Research: Funding from Spanish Science and Education Ministry and European Union (REPLACES). The other authors have no conflicts of interest to report concerning the research dealt with in this manuscript.

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Supplementary Table 1: Neuropsychological test scores of the different groups.

	Control (n=20)	PDCN (n=21)	PD-MCI (n=28)	PDD (n=19)	PD-MCI vs PDCN	PDD vs PD-MCI
MMSE	30 (28-30)	29.5 (28.7-30)	28 (25-29)	18.5 (15.7-21.2)	p<0.01	p<0.01
IDDD	33 (33-34)	33 (33-34)	36 (33.7-39)	49 (42.7-57.5)	p<0.01	p<0.01
Phonemic fluency	14.5 (11-18)	16 (9.5-22)	10 (7-12)	6.5 (2.2-9)	p<0.01	P<0.05
Semantic fluency	18 (15-21.5)	18.5 (15.7-22.7)	11 (9-15)	8 (5.2-10)	p<0.01	p<0.01
Stroop-Words	96 (84-105)	93 (80-100)	64.5 (53.2-84)	41 (13-54.5)	p<0.01	p<0.01
Stroop-Color	60 (50-65)	55 (48.5-65)	41.5 (35.7-50)	28.5 (10.7-34.5)	p<0.01	p<0.01
Stroop Word-Color	30 (25-32)	28 (24.5-35.5)	18.5 (12-22.5)	12 (8-15.7)	p<0.01	P<0.05
Raven	27 (26-30.5)	28.5 (25-31.2)	21 (18-25.5)	9 (2-18)	p<0.01	p<0.01
Trail A	56 (44.2-68.5)	43 (32.5-59.5)	75 (56-100)	299 (170-301)	p<0.01	p<0.01
Trail B	122 (89-157)	97 (58.5-153)	225 (165-300)	301 (300-301)	p<0.01	p<0.01
Cerad Word delayed recall	6 (5-7)	5 (3-6)	3 (0.5-4)	0.5 (0-2.7)	p<0.01	p=0.05
Buschke	47.5 (46-48)	48 (47-48)	47 (45.5-48)	38.5 (16.5-44)	p=0.45	p<0.01
Boston	53 (45-56.5)	55 (51.7-57.2)	45(38-48.5)	34 (29-43.5)	p<0.01	p<0.01
Copy of Figure	10 (10-10)	10 (10-10)	10 (9-10)	8 (3-10)	p=0.43	p<0.01
Recall of Figure	10 (3-10)	10 (8-10)	4 (0-8)	0 (0-4)	p<0.01	p=0.07
Copy of intersecting pentagons	2: 100% (16)	2: 94.1% (16) 1: 5.8% (1)	2: 77.7% (21) 1: 18.5% (5) 0:3.7% (1)	2: 0% 1: 29.4% (5) 0: 70.5% (12)	p=0.33	P<0.01

Data are expressed as median (interquartile range)
No differences between PDCN and control subjects were found for any test. All comparisons between PDD and PDCN and between PDD and control subjects showed significant differences (p<0.01 or p<0.001)
PDCN= cognitively normal PD patients, PD-MCI= PD patients with mild cognitive impairment; PDD= PD patients with dementia

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ORIGINAL ARTICLE

Posterior parietooccipital hypometabolism may differentiate mild cognitive impairment from dementia in Parkinson's disease

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Abstract
Purpose Patients with Parkinson's disease (PD) may have normal cognition, mild cognitive impairment (MCI) or dementia. We investigated differences in cerebral metabolism associated with these three cognitive states and the relationship between metabolism and cognitive dysfunction.
Methods FDG PET and a battery of neuropsychological tests were used to study PD patients with dementia (n=19), MCI (n=28) and normal cognition (n=21), and control subjects (n=20). Regional glucose metabolism in patients and controls was analysed using statistical parametric mapping (SPM8) corrected for age, motor severity and depression. Correlations between the mini-mental state examination score and Z-score values of the different cognitive domains with respect to cerebral FDG uptake were assessed using SPM8.
Results PD patients with MCI (PD-MCI patients) exhibited decreased FDG uptake in the frontal lobe, and to a lesser extent in parietal areas compared with cognitively normal patients. Patients with dementia showed reduced metabolism in the parietal, occipital and temporal areas and a less extensive reduction in the frontal lobe compared with PD-MCI patients, while widespread hypometabolism was seen in comparison with patients with normal cognition. PD-MCI patients exhibited reduced FDG uptake in the parietal and occipital lobes and in localized areas of the frontal and temporal lobes compared with controls, whereas patients with dementia showed a widespread reduction of cortical metabolism. Mini-mental state examination score correlated positively with metabolism in several lobes, executive function with metabolism in the parietooccipitotemporal junction and frontal lobe, memory with temporoparietal metabolism,

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visuospatial function with occipitoparietal and temporal metabolism, and language with frontal metabolism.
Conclusion PD patients with MCI exhibited hypometabolism in several cortical regions compared with controls, and in the frontal and parietal regions compared with cognitively normal patients. Hypometabolism was higher in patients with dementia than in those with MCI, mainly in the posterior cortical areas where it was correlated with visuospatial, memory and executive functions.

Keywords Parkinson's disease · Mild cognitive impairment · PET · Cerebral metabolism · Dementia

Introduction

Cognitive impairment is a frequent comorbidity in Parkinson's disease (PD), with a reported dementia prevalence of up to 80 % in long-term longitudinal studies [1, 2]. Mild cognitive impairment (MCI) is defined as a cognitive decline that is not normal for age but in which essentially normal functional activities can be maintained [3–6]. This condition is also common in PD and is considered a risk factor for the development of dementia [7]. As yet, the pattern of progression of the cognitive decline from MCI to dementia in PD patients has not been well defined, and longitudinal studies addressing the neuropsychological predictors of dementia in PD have yielded inconsistent results [6–9]. However, a longitudinal study on early PD concluded that patients with deficits in tasks with a more temporal and parietal lobe involvement ("posterior cortical" dysfunction) have a higher risk of developing dementia [10]. Similar results were found in a cross-sectional study assessing the cognitive changes characterizing the transition from MCI to dementia in PD [11]. In keeping with this, a recent longitudinal study involving FDG PET showed that patients who develop dementia have reduced baseline FDG uptake in the visual association area and posterior cingulate cortex [12].

Cross-sectional studies with FDG PET have revealed that dementia is associated with widespread areas of cortical hypometabolism [13–19], while in PD patients with MCI (PD-MCI patients), hypometabolism appears to be more localized to the temporoparietooccipital junction and the frontal cortex [18–20] compared with healthy controls. In addition, PD-MCI patients show reduced FDG uptake in the frontal and parietal regions with respect to cognitively normal PD (PDCN) patients [19, 21]. However, the metabolic changes that distinguish PD-MCI patients from PD patients with dementia (PDD) have not been studied as yet.

We hypothesized that PDD patients would have greater hypometabolism in posterior cerebral areas than PD-MCI patients. Here, we describe patterns of cerebral metabolism in PD-MCI patients compared with PDD patients and with PDCN patients. Our aim was to identify metabolic differences between the cognitive states in PD, specifically between dementia and MCI. We also report the correlations between cerebral metabolism and cognitive status in specific cognitive domains.

Material and methods

Subjects

A cross-sectional study was conducted in patients with PD diagnosed according to the UK Parkinson's Disease Society Brain Bank criteria [22] who were consecutively recruited from the Movement Disorders Unit of the Clinica Universidad de Navarra. Patients over 60 years of age and with a disease duration of at least 10 years were included, as this profile best represents the PD population with the highest risk of cognitive decline [23]. Exclusion criteria were other brain disorders, abnormal findings on MRI (i.e. tumour, hydrocephalus or severe vascular lesions), severe systemic disease, major psychiatric illness, prior cerebral surgery, abnormalities in thyroid function, positive VDRL test and low levels of vitamin B12 or folic acid. Healthy controls were recruited from among members of the Association of Blood Donors of Navarra (Spain). Controls with any history of neurological, psychiatric or major medical illness, memory complaints, scores below normal in the neuropsychological assessment or with MRI abnormalities were ruled out. The Ethics Committee for Medical Research of the University of Navarra approved the study, and all patients, or their legal representatives, and controls provided informed consent to participate in the study.

Motor assessments

The motor state in PD patients was assessed using the Hoehn and Yahr scale and the motor section of the unified Parkinson's disease rating scale (UPDRS-III) in the "off" (minimum of 12 h without anti-parkinsonian medication) and "on" states. Drug intake was recorded and dopaminergic treatment calculated in levodopa equivalents (Table 1).

Neuropsychological assessment

Global cognitive function was evaluated with the mini-mental state examination (MMSE) [24]. The Interview for Deterioration in Daily Living in Dementia (IDDD) scale [25] was used to assess functional independence. Depression was rated using the Geriatric Depression Rating Scale (GDS) of Yesavage et al. [26]. Different cognitive domains (verbal and visual memory, attention and executive function, language and visuospatial function) were evaluated using a battery of neuropsychological tests [27]. Memory was assessed using the Free and Cue Selective Reminding test of Buschke [28], the Cerad word list, and the delayed recall of two simple figures (Massachusetts General

Table 1 General features of the study groups

	Control (n=20)	PD (n=68)	PDCN (n=21)	PD-MCI (n=28)	PDD (n=19)
Age (years), mean (SD)	67.9 (3.1)	70.6 (6.4)	67 (7.1)	71.5 (3.8)[b]	73.1 (7.1)[a,b]
Male gender, n (%)	11 (55)	37(54.4)	15 (71.4)	14 (50)	8 (42.1)
Disease evolution (years)	–	13,6 (5.1)	12.4 (3.8)	14.1 (6)	14.3 (5.1)
UPDRS III "on", mean (SD)	–	20.8 (10.6)	16.4 (7.1)	17.7 (9.1)	30.8 (10.2) [c,e]
UPDRS III "off", mean (SD)	–	37.9 (12.4)	32.3 (8.4)	33.2 (13.3)	49.4 (10.3) [b,d]
Levodopa equivalents (mg/day), mean (SD)	–	1147 (585.7)	1062 (347.2)	1249 (700.8)	1088 (616.5)
GDS score, mean (SD)	4.4 (4.1)	9.9 (5.2)[a]	7.8 (5.2)	9.9 (4.9)[a]	12.8 (5.9)[a,b]
Hallucinations, n (%)	–	18 (26.5)	2 (9.5)	5 (17.8)	11 (57.9)[c,e]
Hoehn and Yahr scale score, mean (SD)	–	3 (0.8)	2.6 (0.6)	2.9 (0.7)	3.7 (0.7) [c,e]
Education (years), mean (SD)	9.8 (3)	10.2 (3.2)	11.7 (3.6)	9.9 (3.1)	9 (2.3)

[a] $p<0.001$ vs. control group
[b] $p<0.05$ vs. PDCN
[c] $p<0.001$ vs. PDCN
[d] $p<0.05$ vs. PD-MCI
[e] $p<0.001$ vs. PD-MCI

Hospital, Boston). Other tests used were the Raven's Progressive Matrices, semantic (animals) and phonetic (words starting with "p") verbal fluency [29], Trail Making Test parts A and B, the Stroop test and Digit Span Forward and Backwards task for attention and executive functions. The Boston naming test and verbal fluency were evaluated for language, and the copying of two simple figures and the two intersecting pentagons of the MMSE were used for testing visuospatial function. All tests were applied by two members of the team to control subjects and patients under treatment, and were used alongside the diagnostic criteria to diagnose PD patients as being cognitively normal, as having MCI or as having dementia.

Criteria for diagnosing cognitive status

The clinical diagnostic criteria for dementia in PD [30] were applied to diagnose dementia in the present study. MCI was diagnosed in nondemented patients when the following two features were present: (1) cognitive decline was reported by either the patient or informant, or observed by the neurologist, but the decline did not interfere significantly with the functional independence of the patient; (2) the patient scored more than 1.5 standard deviations below control values in at least two tests in the neuropsychological battery, either within a single cognitive domain or across different cognitive domains [31]. Values used to determine test score deviations in PD patients were taken from a sample of 20 age- and education-matched healthy control subjects. Individual neuropsychological test scores were transformed into Z-scores using the mean and standard deviation of the control sample according to the following formula: (test score − median score from control sample)/standard deviation from control sample. Single-domain PD-MCI was diagnosed when abnormalities (the two abnormal tests) were present in a single cognitive domain. Multiple-domain PD-MCI was diagnosed when abnormalities were present in at least one test in two or more cognitive domains. In addition, to correlate the cognitive state with FDG uptake, the Z-score for the different domains was calculated from the average of the Z-scores of the tests assessing each domain. Patients not fulfilling criteria for MCI or dementia were considered to have cognitively normal PD.

FDG PET

Image data acquisition

Patients were studied in the "on" pharmacological condition (i.e. under the effect of their usual anti-parkinsonian dopaminergic medication). Central nervous system depressant drugs such as benzodiazepines, neuroleptics or antidepressive treatments were withdrawn according to their pharmacological kinetics. Additionally, subjects fasted overnight before PET scanning. Before injection of the radiopharmaceutical, blood glucose was checked and was <120 mg/dL in all patients. After a few minutes of rest in silence and with dimmed lighting, ^{18}F-FDG (370 MBq) was injected intravenously, and subjects were required to rest for 40 min in the supine position on the PET scanner bed with their eyes closed. Then, 74 planes (128×128 matrix) were acquired with a voxel size of 2.06×2.06×2.06 mm during a 20-min scan using a Siemens ECAT EXAT HR+ scanner (Siemens, Knoxville, TN). A transmission scan in 3D mode for attenuation correction was performed at the end of the acquisition

period [32]. Images were reconstructed by means of a filtered back-projection method using ECAT software (version 7.2; Siemens).

Data analysis

Data were processed using statistical parametric mapping (SPM8) software (Wellcome Department of Neurology, London, UK) implemented in Matlab 7.13 (MathWorks Inc. Sherborn, MA). First, we created a customized FDG PET template using data from the control sample (n=20). For this purpose, all control subjects were scanned with a 1.5-T Siemens Symphony system using a three-dimensional T1-weighted gradient-echo sequence (acquisition parameters: coronal acquisition, TR/TE/TI 1,900/3.36/1,100 ms, flip angle 15°, 144 slices, FOV 187×250 mm, matrix 192×256, voxel size 0.98×1.6×0.98 mm). Thus, control FDG PET images were coregistered with their corresponding MR images. MR images were segmented using the SPM8 segmentation tool [33] in MATLAB 7.0. Grey matter (GM) and white matter templates were generated from the entire image dataset using the DARTEL technique [34]. After an initial affine registration of the GM DARTEL templates to the tissue probability maps in Montreal Neurological Institute (MNI) space [35], nonlinear warping of the GM images was performed to normalize them onto the MNI space. The spatial normalization parameters of each MR image were then applied to each corresponding coregistered FDG PET image. The FDG PET template was obtained by averaging the spatially normalized PET images and smoothing using an isotropic gaussian filter with a full-width at half-maximum of 8 mm.

All FDG PET images were spatially normalized into a standard stereotactic MNI space using the customized FDG template. For every spatially normalized PET image, voxel values were normalized to pons activity (becquerels per centimetre cubed) using the pons volume of interest (Nifti format) from WFU PickAtlas v3.0 [12, 36–38]. Finally, the resulting PET scans were smoothed with an isotropic gaussian filter with a full-width at half-maximum of 8 mm. Changes in metabolism were assessed by analysis of the preprocessed images using one-way analysis of variance. Age and GDS score were included as covariates for the metabolism comparison between controls and patients, while for the metabolism comparison between the different groups of patients, age, UPDRS-III and GDS scores were included as covariates. Significance was set at $p<0.05$ and corrected for multiple comparisons, i.e. a false discovery rate (FDR) with a cluster size of >20 voxels. In the comparison between PD-MCI and PDCN patients in which less significant differences would be expected, significance was set to $p<0.001$ uncorrected, similar to previous works in the field [18, 19]. The correlation between the MMSE, UPDRS-III, GDS scores and Z-scores of the different cognitive domains and glucose metabolism was assessed in PD patients using regression analysis and significance set at $p<0.001$ uncorrected, with a cluster size of >20 voxels.

The coordinates of the voxel peaks were transformed into Talairach space using the mni2tal program by Dr. M. Brett (http://imaging.mrc-cbu.cam.ac.uk/imaging/MniTalairach) and their anatomical locations were found using Talairach Daemon Client [39].

Statistics

Differences in the demographic and clinical characteristics between the PD groups and controls were analysed using Fisher's exact test in cases of categorical variables, analysis of variance with post-hoc Bonferroni's multiple comparison in cases of continuous, normally distributed variables, and the Kruskal-Wallis and Mann-Whitney U tests for continuous, nonparametric variables. The normality of the distributions of clinical and demographic variables was assessed using the Kolmogorov-Smirnov test. A value of $p<0.05$ was considered to indicate statistical significance.

Results

Clinical data

The subjects included 20 controls and 68 PD patients (21 PDCN, 28 PD-MCI, and 19 PDD). The demographic and clinical characteristics of all groups are summarized in Table 1. With the exception of a higher GDS score, PD patients did not differ from control subjects. PDD patients were older than controls and PDCN patients. They also had higher GDS scores than PDCN patients, and had more severe parkinsonism (UPDRS and Hoehn and Yahr scores) and more hallucinations than PDCN and PD-MCI patients. The PD-MCI patients were older than PDCN patients, with no other differences in clinical features.

Compared with the controls and PDCN patients, PDD patients had poorer scores in all neuropsychological tests, while with respect to PD-MCI patients, they had poorer scores in all but the recall of figures and word delayed recall tests (Supplementary Table 1). PD-MCI patients in turn had lower scores than PDCN patients for all tests, with the exception of the Buschke and the copying of simple figures and intersecting pentagon tests. The cognitive domains affected in PD-MCI patients were as follows: three patients (10.7 %) had only the executive domain affected; 14 patients (50 %) had two domains affected (executive and memory in nine patients, executive and visuospatial in four patients, executive and language in one patient); six patients (21.4 %) had three domains affected (executive, memory

and language in five patients, and executive, visuospatial and memory in one patient); and five patients (17.4 %) had four domains affected. No differences were found between controls and PDCN patients (Supplementary Table 1).

Regional differences in FDG PET

Comparison between PD groups

PDD patients had extensive bilateral areas of reduced FDG uptake in the frontal, parietal, occipital and temporal lobes and in the posterior cingulate cortex compared with PDCN patients (Fig. 1A). PDD patients had a lower metabolism mainly in posterior brain areas (parietal, occipital and temporal lobes) than PD-MCI patients, and also, albeit to a lesser extent, in the right frontal lobe (Fig. 1B; Supplementary Table 2). Compared with PDCN patients, PD-MCI patients did not exhibit regions of reduced metabolism. However, using a relatively lower conservative threshold ($p<0.001$ uncorrected), PD-MCI patients showed hypometabolism that was mainly localized in the left frontal lobe and to a lesser extent in the left parietal lobe (Fig. 1C; Supplementary Table 2). PDCN patients did not show reduced FDG uptake in any region compared with PDD and PD-MCI patients. Likewise, PD-MCI patients did not show reduced FDG uptake in any region compared with PDD patients.

Comparison between PD groups and controls

As expected, PDD patients showed an extensive bilateral reduction in FDG uptake in the frontal, parietal, occipital and temporal lobes, in the anterior cingulate cortex, and in the caudate nucleus compared with controls (Fig. 2A; Supplementary Table 3). In PD-MCI patients, more localized hypometabolic areas were identified in the parietal (mainly in the angular gyrus) and occipital lobes, and to a lesser extent in the frontal and temporal lobes (Fig. 2B; Supplementary Table 3). PDCN patients did not show hypometabolic areas compared with controls. No regions of reduced metabolism were identified in the control subjects compared with the PD patients.

Correlation between cerebral metabolism and cognitive state in PD patients

A positive correlation between FDG uptake and MMSE score in all PD patients was observed for uptake in the parietal, occipital, temporal and frontal lobes, and in the anterior cingulate cortex and caudate nucleus using GDS and UPDRS-III scores and age as nuisance variables (Fig. 3). In addition, there were positive correlations between the Z-score of cognitive domains and FDG uptake as follows: executive function in the parietal, frontal and occipitotemporal junction; memory with temporal and parietal regions; visuospatial function with posterior areas (occipitoparietal and temporal) uptake; and language with anterior areas mainly the frontal lobe (Fig. 4). No correlation between the GDS score and FDG uptake was observed.

Regions with hypermetabolism and clinical correlation

Compared with control subjects, PD patients exhibited increased metabolism in the putamen, thalamus and cerebellum and in the motor cortical (paracentral gyrus) areas bilaterally, but there were no differences among the PD

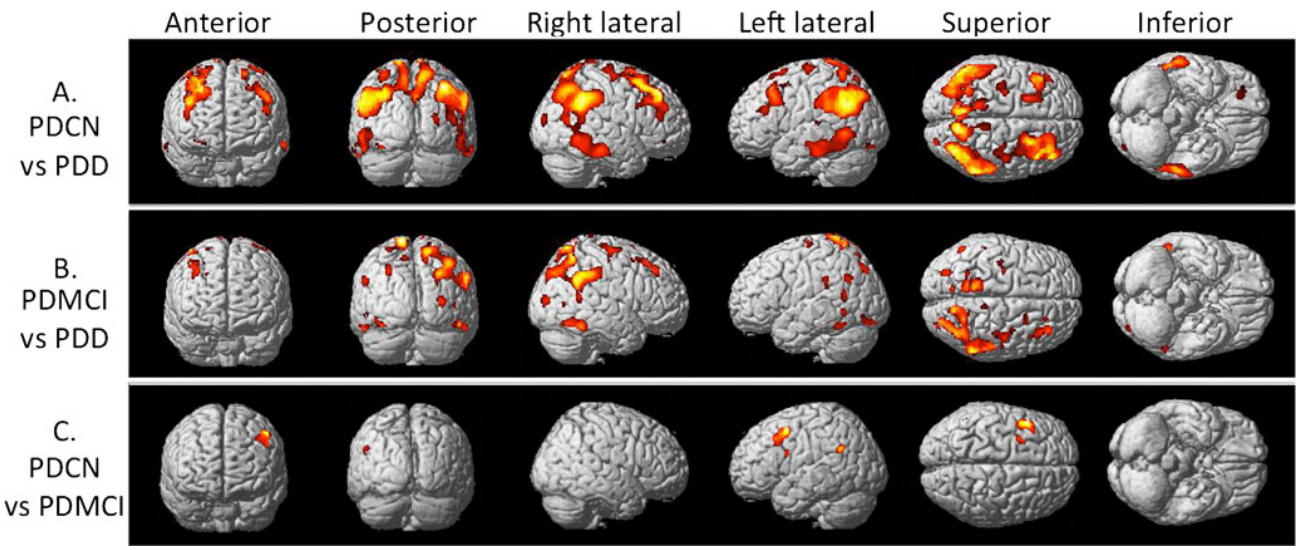

Fig. 1 Regions with reduced metabolism comparing PDD, PD-MCI and PDCN patients: *A* PDD<PDCN, *B* PDD<PD-MCI, *C* PD-MCI<PDCN ($p<0.05$ FDR corrected for *A* and *B*; $p<0.001$ uncorrected for *C*; age, GDS and UPDRS III score as covariates in all comparisons)

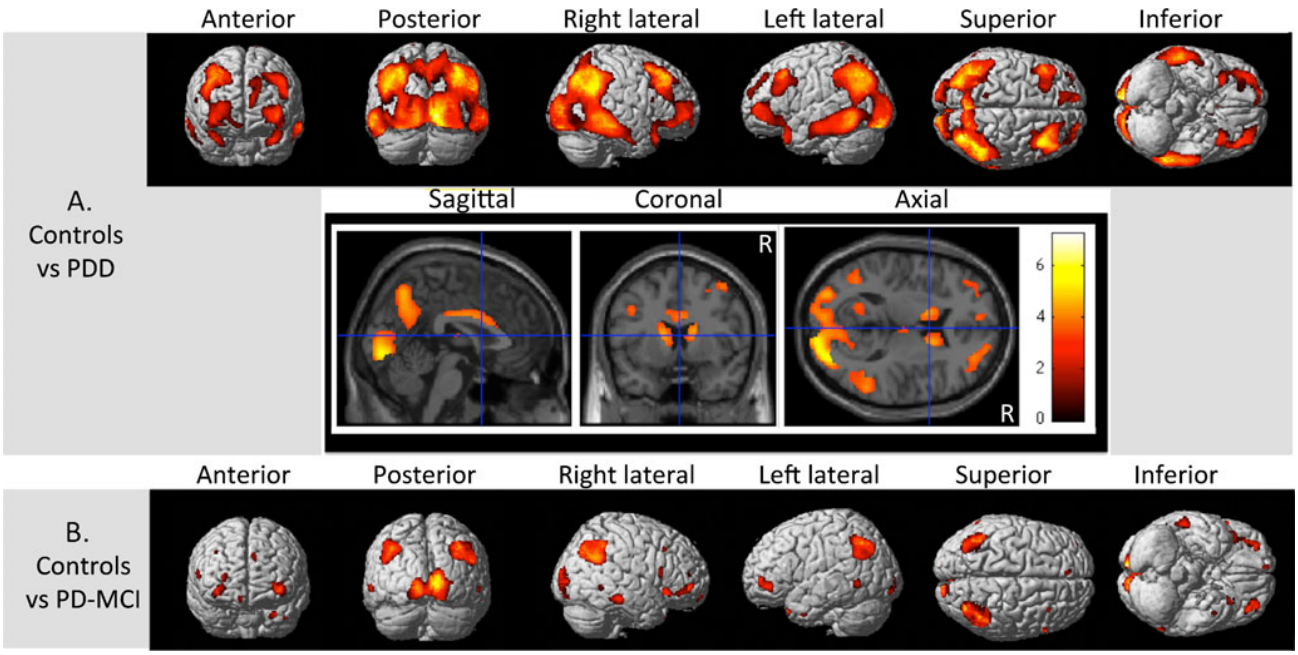

Fig. 2 Regions with reduced metabolism comparing PDD patients and PD-MCI patients with respect to control subjects: *A* PDD<controls, *B* PD-MCI<controls ($p<0.05$ FDR corrected; age and GDS score as covariates)

groups (Fig. 5A–C). Moreover, FDG uptake in cortical areas was positively correlated with the UPDRS-III score but there was no correlation with the MMSE score (Fig. 5D).

Discussion

We compared cerebral FDG uptake in PDCN, PD-MCI and PDD patients, and control subjects. A major finding was that with respect to PDCN patients, PD-MCI patients showed a reduction in metabolism that predominated in the frontal lobe and to a lesser extent in the parietal lobe. In contrast, hypometabolism in PDD patients compared with PD-MCI patients was mainly located in posterior brain regions (parietal, occipital and posterior temporal areas) and to a lesser extent in the frontal lobe. We also found that, compared with controls, PDD and PD-MCI patients shared a common pattern of reduced metabolism in the parietal and occipital lobes, and to a lesser extent in the frontal and temporal lobes. However, in PDD patients the cortical

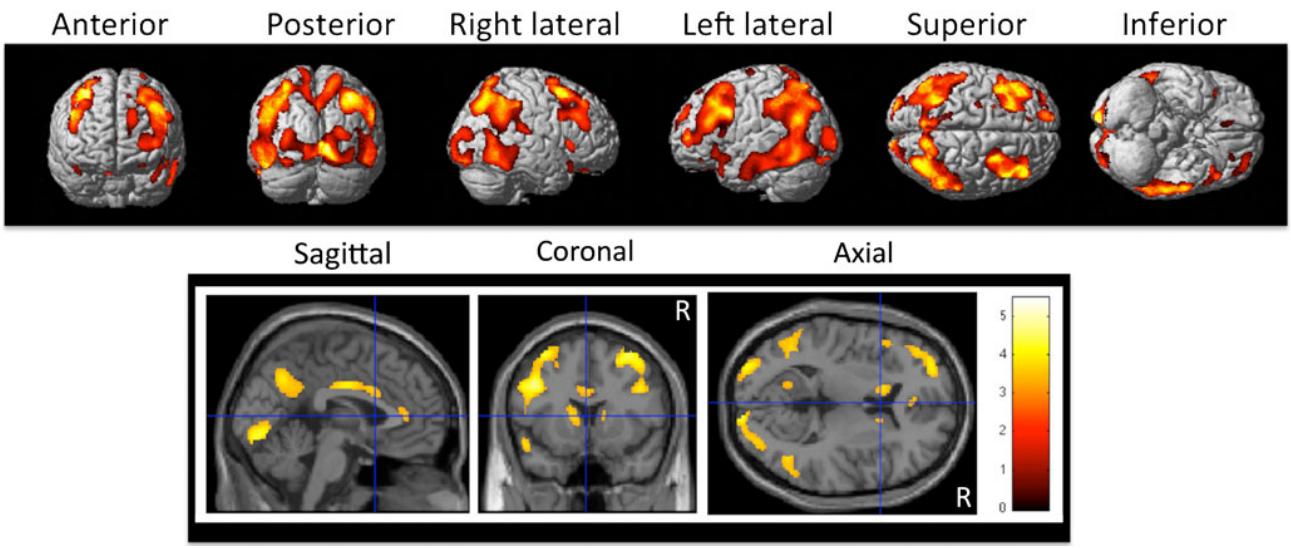

Fig. 3 Positive correlations between MMSE score and FDG uptake in all PD patients ($p<0.001$ uncorrected; age, GDS and UPDRS-III as covariates)

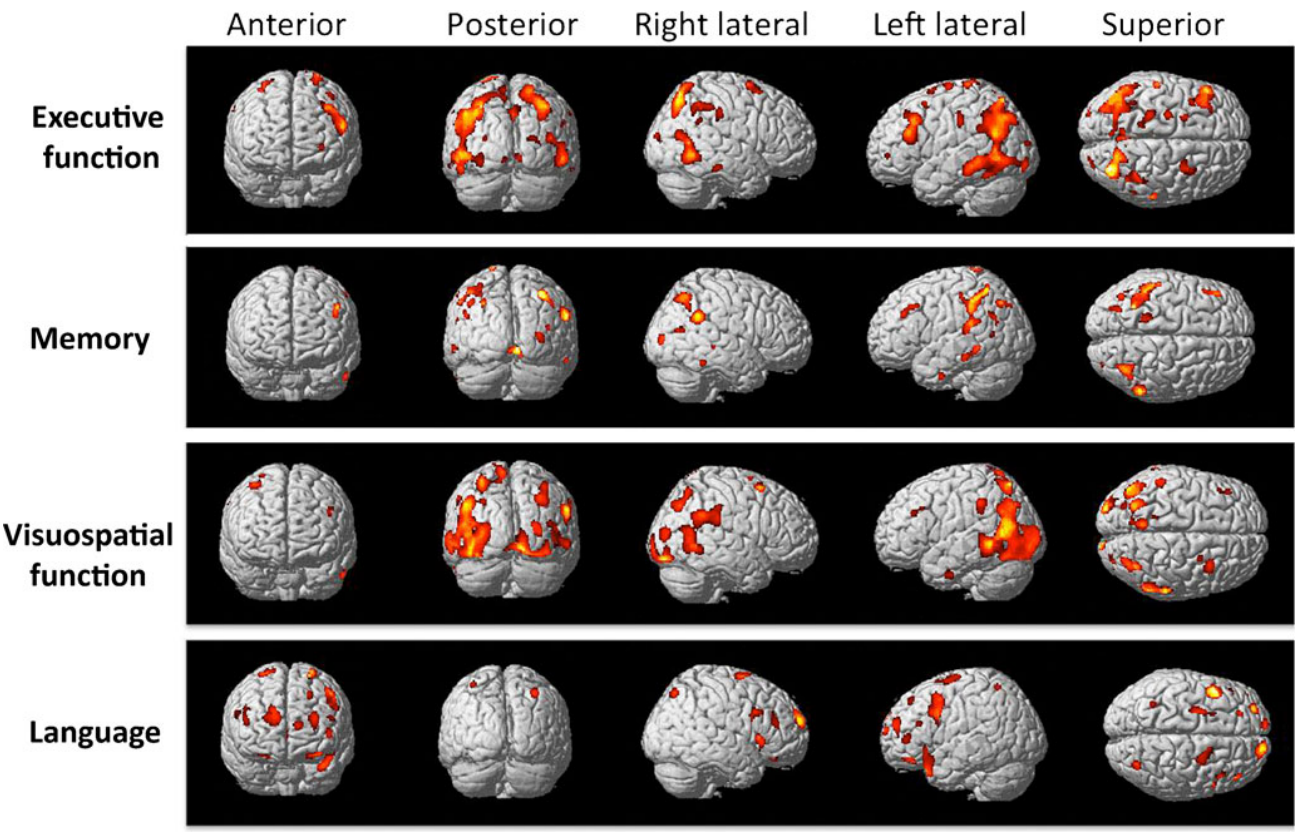

Fig. 4 Positive correlations between the Z-score of cognitive domains altered in PD patients and FDG uptake

hypometabolism was more widespread affecting wider cortical and subcortical areas compared to that seen in control subjects. Taken together, our data suggest that dementia in PD is characterized by a more intense and widespread cerebral hypometabolism than MCI in PD patients and that this hypometabolism predominates in posterior cortical areas. We also found that deficits in different cognitive domains in PD were associated with reduced cerebral metabolism involving different brain regions. Thus, our results further define aspects of cerebral metabolism associated with MCI and dementia in PD.

Most previous studies have focused on comparing the cerebral metabolism of PD patients with that of control subjects [13–17, 20], but putative distinctive features among the different cognitive states in PD have been poorly elucidated. While a reduction in FDG uptake in the posterior and frontal cortices of PD-MCI patients compared with PDCN patients has been identified in some studies [18, 19, 21], no study has been carried out to compare differences between PD-MCI and PDD patients. A cross-sectional study [11] demonstrated that dementia differs from MCI by both a generalized failure in executive function and the addition of "posterior cortical dysfunction" (naming and clock copy tests). Further to this, the Cambridge longitudinal study showed that PD patients with deficits in tasks revealing a predominant temporal and parietal lobe ("posterior cortical") dysfunction have a higher risk of dementia than those with only a frontal executive dysfunction [10]. In keeping with this, a recent longitudinal study showed that patients who develop dementia after 3.9 years of follow-up have a low performance in delayed visual reproduction learning and a reduced FDG uptake in the visual association and posterior cingulate cortex at baseline compared to controls [12]. In addition, hypometabolism in the parietooccipitotemporal and medial temporal brain has been correlated with visuospatial and mnemonic functioning in PD patients [40]. Here we report that PDD patients have reduced FDG uptake compared with PD-MCI patients mainly in the parietal, occipital and posterior temporal areas, supporting the notion that a cognitive deficit based on posterior cortical function (i.e. visuospatial and memory) is the main difference between the two cognitive states.

We also found that PD-MCI patients exhibited a reduction in metabolism in the frontal and parietal lobes compared with PDCN patients. Previous FDG PET studies have shown similar results [19] or more extensive hypometabolism in the posterior cortex [18, 21]. The discrepancy is probably due to the different criteria used for the diagnosis of MCI. For example, when a clinical scale (the clinical dementia rating scale) for staging the severity of dementia was used

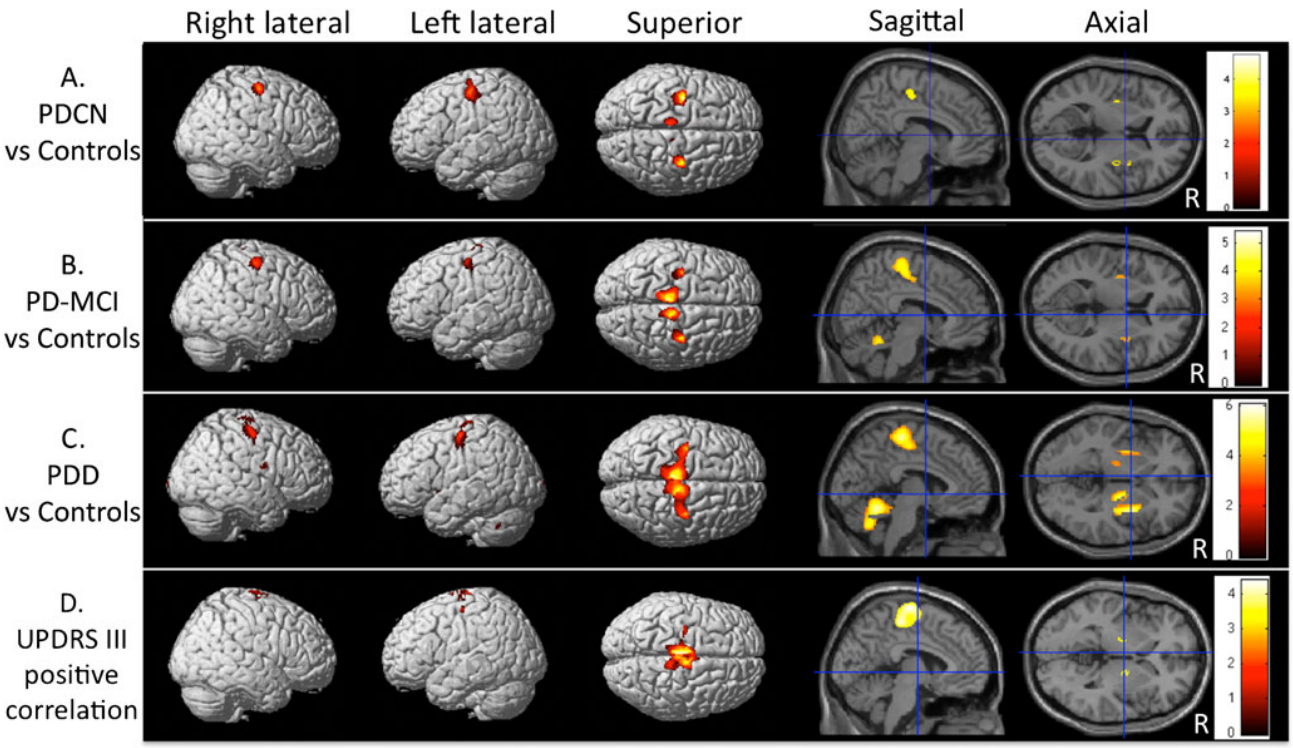

Fig. 5 Regional increases in metabolism comparing PDD, PD-MCI and PDCN patients with respect to control subjects: *A* PDCN>controls; *B* PD-MCI>controls; *C* PDD>controls ($p<0.05$ FDR corrected; age and GDS score as covariates). *D* Positive correlation between UPDRS III score and FDG uptake ($p<0.001$ uncorrected)

and MCI was diagnosed for a score of 0.5, corresponding to very mild dementia, patients with MCI had more extensive hypometabolism in the posterior cortex than PDCN patients [18]. In a similar manner to Huang et al. [19], we used a more stringent diagnostic criterion based on 1.5 standard deviations in neuropsychological test scores with respect to control subjects' scores. This approach probably resulted in the classification of PD-MCI patients with lower levels of cognitive deficits. Consequently, these data also reinforce the association between more severe cognitive deficits and a higher level of posterior cortical hypometabolism.

It should be noted that the diagnostic criteria for MCI are still under development, and MCI in PD requires further definition [31]. Currently, MCI in PD includes different cognitive abnormalities depending upon the number and type of cognitive domains affected. As yet, whether a given subtype of MCI in patients with PD might confer a higher risk of developing dementia has not been clarified. A single prospective study in a small number of patients showed that single and multiple-domain non-amnestic forms of MCI were more associated with the development of dementia 4 years later [7]. Although ongoing longitudinal studies will eventually clarify this point, it is probable that PD patients with multiple-domain MCI have a more severe or advanced cognitive decline than those with single-domain forms, and therefore are at a higher risk of developing dementia. In this sense, previous cerebral FDG PET studies did not highlight differences between PD patients with single-domain MCI and those with normal cognition. In contrast [19, 21], patients with multiple-domain MCI showed reduced metabolism in the frontal and parietal lobes, and less consistently in the temporal lobe than PDCN patients [18, 19, 21]. In the present study, all but three patients with PD-MCI had a multiple-domain type of MCI, giving more consistency to the differences found in cerebral metabolism underlying each cognitive state in patients with PD [10, 11].

We have also demonstrated a relationship between metabolic findings and cognitive state given the correlations observed between the severity of the global and cognitive domain deficits measured by MMSE and the corresponding Z-scores, respectively, and regions of reduced metabolism in PD patients after correcting for age, depression (GDS score) and motor severity (UPDRS-III). We found that executive function mainly correlated with metabolism in the parietooccipitotemporal junction and frontal lobe, while memory correlated with metabolism in the temporal and parietal regions, and visuospatial function correlated with posterior areas (occipitoparietal and temporal). In contrast, language was correlated with metabolism in anterior (mainly frontal) areas. These results are in keeping with those of previous studies in PD patients showing that bilateral hypometabolism in the frontal and parietal regions and in the parietooccipitotemporal and

medial temporal brain correlate with executive dysfunction [41–45] and visuospatial and mnemonic functioning, respectively [40]. Although partially limited by the lack of data in normal individuals, the correlations reported here also indicate that the higher posterior hypometabolism in PDD with respect to PD-MCI patients is related to a worsening of executive dysfunction and to the addition of visuospatial and memory deficits.

This was a cross-sectional study seeking to identify metabolic differences between PDD and PD-MCI patients. Considering that MCI forms part of the cognitive decline preceding the development of dementia, only large longitudinal studies will allow a better definition of clinical MCI and of the changes that characterize the transition from MCI to dementia. Our findings therefore require confirmation in prospective studies with a larger number of patients. Nevertheless, we have studied a large number of PD patients considered to be at high risk of developing dementia [23]. Indeed, it has been reported that the development of substantial abnormalities in the defined cognitive network expression in PD takes places by the end of the first decade following clinical onset [14]. Patients in our study were studied while under dopaminergic treatment, but the doses were not different between the different groups and it is known that dopaminergic drugs do not have a significant impact on the pattern of cognitive expression detected in FDG PET [14, 41]. Moreover, there were no differences in other treatments that could have interfered with the results; for example, only three PDD patients [46] were receiving treatment with cholinesterase inhibitors, which would have increased the FDG uptake [46].

The disease duration was not different among the groups, but one limitation of this study is that, due to the natural course of the disease and the age at which dementia most frequently occurs, PDD patients exhibited a greater degree of motor disability than patients in the other groups, were older on average and had higher depression scale scores than PDCN patients and controls [16, 17, 47–50]. It should be noted that the metabolic pattern related to motor aspects is different from that related to cognition [14]. In addition, we did not identify any correlation between depression score and cerebral metabolism. However, the data were corrected for age, motor severity and depression, and therefore we believe the results would not have been significantly affected by these factors. Further to this, the validity of our data is reinforced by the fact that the metabolic patterns in the PD groups studied here in comparison with control subjects are similar to those reported in the literature [13–18, 51]. Moreover, the subcortical (putamen and thalamus) and motor cortical (paracentral gyrus) hypermetabolic areas encountered in all groups of PD patients were also in keeping with the PD-related motor pattern [52, 53], and actually correlated positively with the UPDRS-III score. In addition, we used a more advanced version of the software for image analysis (i.e. SPM8) and corrected our data more thoroughly than in previous studies (FDR corrected at $p<0.05$). Admittedly, as a result of the use of this conservative threshold, PD-MCI patients did not show regions of reduced metabolism compared with PDCN patients. Thus, differences between PD-MCI and PDCN patients were obtained only with the less-conservative analysis (uncorrected $p<0.001$). However, the metabolic differences previously reported between these two groups of patients (PD-MCI and PDCN) have also been obtained with uncorrected data [18, 19, 21].

Conclusion

Our study demonstrated that PD-MCI patients exhibited hypometabolism (decreased FDG uptake) in numerous cerebral areas compared with controls, and in the frontal and parietal regions compared with PDCN patients. In contrast, dementia in PD was characterized by a more expansive cerebral hypometabolism than MCI, with predominance in the posterior cortical areas. The reduction in FDG uptake in these posterior areas correlated with poorer outcomes in visuospatial, memory and executive functions. Taken together, these results indicate that dementia in PD is associated with a worsening of executive dysfunction along with an impairment of visuospatial and memory function.

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Conflicts of interest Maria C. Rodriguez-Oroz is on the advisory board of UCB Spain. She has received payment for lectures, as well as travel and accommodation to attend scientific meetings from GlaxoSmithKline, UCB, Lundbeck and Medtronic. She has received research funding from national and regional government bodies in Spain. Jose Obeso has served previously on the Advisory Board of GSK (UK), and received honorarium for lectures given at meetings organized by GSK (Spain), Lundbeck-TEVA and UCB. Grants/Research: Funding from Spanish Science and Education Ministry and European Union (REPLACES). The other authors have no conflicts of interest to report concerning the research dealt with in this manuscript.

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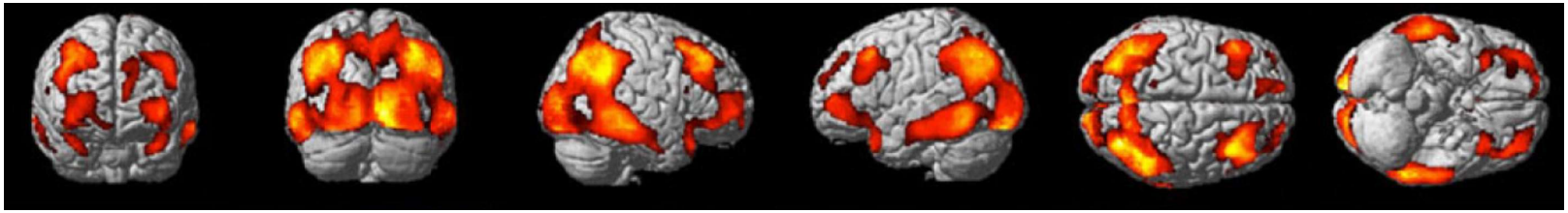
PD Dementia



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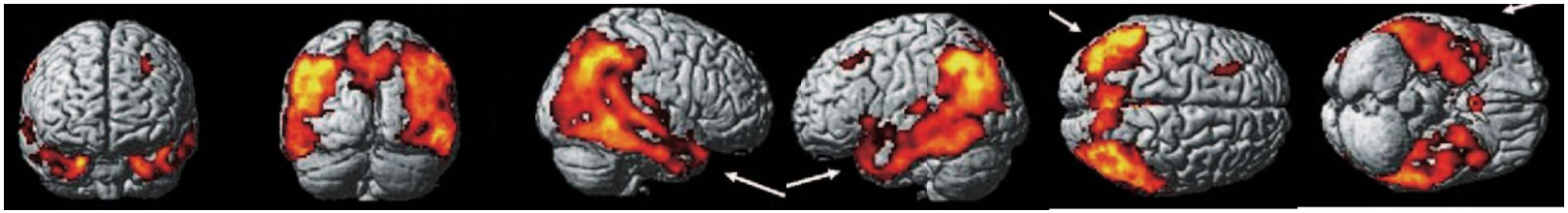

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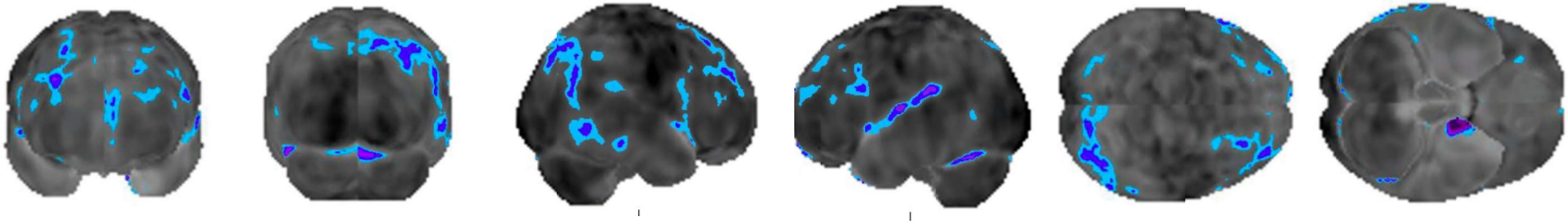

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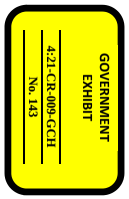

Gov. Ex. 144

Message

From: Jackson, Jim [Jim_Jackson@reyrey.com]
Sent: 4/1/2020 1:05:26 AM
To: Barras, Tommy [Tommy_Barras@reyrey.com]
Subject: Re: Resignation - Rob Gibbs

Tommy:

Protecting Bob and Dorothy is what all of us need to do. And we also need to protect you. Again, let me know how I can help.

Jim

Dr. Jim Jackson
Corporate Coach, Reynolds and Reynolds
6700 Hollister Street
Room 204 A
Houston, TX. 77040
Jim_Jackson@ReyRey.com
www.JimsDailyAwakenings.com (daily email)
Office (713) 718-1800; EXT. 72245
Cell (713) 377-1070

On Mar 31, 2020, at 5:38 PM, Barras, Tommy <Tommy_Barras@reyrey.com> wrote:

Thank you – you are my hero.

On side note, I am getting "fragged" by some. Bob's plan is under attack – he's starting to give in some to lessen his pain which I do not have a problem with. While his pain may be reduced – the pains passed onto me will get really ugly.

I keep reminding myself I must protect Bob and Dorothy no matter the cost to me….. I hoped the new role would be fun, good, positive. Looks like ugly gets included in the package – guess that's part of the badge.

Keep you posted. Writing you helps with frustration. Thanks for being there for me

Tommy

From: Jackson, Jim <Jim_Jackson@reyrey.com>
Sent: Tuesday, March 31, 2020 5:16 PM
To: Barras, Tommy <Tommy_Barras@reyrey.com>
Subject: Re: Resignation - Rob Gibbs

GOVERNMENT EXHIBIT
4:21-CR-009-GCH
No. 144

GOVERNMENT EXHIBIT
144
11-18-21

Tommy;

I spent 90 minutes on the phone with Robb today. I think his head is in pretty good shape. He's not angry, with you or anyone else. He feels optimistic. He knows it's going to be a long time before he finds a job in this economy, but he's

UCSH 0230485

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leaned in the right direction. Let me worry about this one for you. I'm working with him and I'll continue working with him.

Two things that I especially like about Robb: (1) He's loyal. He's take a bullet for you personally. (2) He's a great team builder. He'll eventually land on his feet. But, truth be told, you may want to hire him next year to help with some special project. You can't tell right now what might come up. One thing is for sure: you wouldn't have to worry about him fragging you—which is more than can be said of everybody around you.

I'm here for you brother.

Jim

Dr. Jim Jackson
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Cell (713) 377-1070

On Mar 31, 2020, at 4:03 PM, Barras, Tommy <Tommy_Barras@reyrey.com> wrote:

Jim

This situation continues to trouble me. I've done many horrible things in my work life with the goal of always protecting Bob and the company. While each event caused me pains – I was able to move on and remain focus on the mission of protecting Bob.

This one is different – not sure why, I just cannot let go and move on. Becoming unhealthy

Hate not being able to visit with you at Club – cannot stand anymore Video conferences.

Lost….

Tommy

From: tommybarras@reyrey.com <tommybarras@reyrey.com>
Sent: Tuesday, March 31, 2020 3:56 PM
To: 'Gibbs, Rob' <rob_gibbs@reyrey.com>
Subject: RE: Resignation - Rob Gibbs

You are a true professional – I will miss you more than I can express in writing. As this chapter ends I pray that our friendship only will gets stronger – I am not leaving you behind. I cannot stand thinking about the bridges being burnt as we separate.

Once this Virus crap ends – I hope you will join me in Colorado (every year) for some fishing, shooting, and just hanging out time……

Before May 1 – we must speak in person, if you need time I'm here. Please reach out for whatever, whenever you need assistance.

Peace my friend.

Tommy

From: Gibbs, Rob <rob_gibbs@reyrey.com>
Sent: Tuesday, March 31, 2020 3:09 PM
To: 'Barras, Tommy' <tommy_barras@reyrey.com>; 'Brockman, Bob' <Bob_Brockman@reyrey.com>
Subject: Resignation - Rob Gibbs

Tommy, Bob,

As Tommy and I have discussed, I am resigning my position at Reynolds & Reynolds. My last day will be Friday, May 1st, 2020.

I truly cannot thank you both enough for all I have learned and the many opportunities you've allowed me during my tenure. Reynolds is an outstanding organization – as I depart, I am proud to have been a part of our successes and eternally grateful to you both. Through your example, guidance, and leadership, I've grown professionally, as a leader, coach, and technologist. As Reynolds continues transitioning responsibilities through my departure, I will ensure I remain available, through May 1 and beyond, to help in any manner I can.

I remain your loyal friend. Please do not hesitate to contact me for anything I may be able to assist you with. I wish you both peace, health, discernment, and the highest of success both in the long term and while guiding Reynolds through the current pandemic.

Sincerely,

Rob
Semper Fidelis

Gov. Ex. 146

From: tommy_barras@reyrey.com [tommy_barras@reyrey.com]
Sent: 11/24/2020 7:39:35 PM
To: 'Jackson, Jim' [Jim_Jackson@reyrey.com]
Subject: RE: Robert

$$'s we are talking about is part of Craig retention bonus – all ExCom members has similar benefit. I'll explain more when we can chat in person

We're not talking about major $$'s when you take in account the agreement we have with ExCom members

Tommy

From: Jackson, Jim <Jim_Jackson@reyrey.com>
Sent: Tuesday, November 24, 2020 12:27 PM
To: Barras, Tommy <Tommy_Barras@reyrey.com>
Subject: Re: Robert

You spoke once of $10m. That's a very high number to get rid of someone you don't actually want.

Jim

Dr. Jim Jackson
Corporate Coach, Reynolds and Reynolds
6700 Hollister Street
Room 204 A
Houston, TX. 77040
Jim_Jackson@ReyRey.com
www.JimsDailyAwakenings.com (daily email)
Office (713) 718-1851 (direct number)
(713) 718-1800; EXT. 72245
Cell (713) 377-1070

On Nov 24, 2020, at 12:25 PM, Jackson, Jim <Jim_Jackson@reyrey.com> wrote:

If he is unreasonable, you can always fire him.

Dr. Jim Jackson
Corporate Coach, Reynolds and Reynolds
6700 Hollister Street
Room 204 A
Houston, TX. 77040
Jim_Jackson@ReyRey.com
www.JimsDailyAwakenings.com (daily email)
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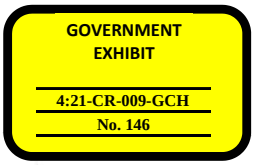
Cell (713) 377-1070



UCSH 0230699

On Nov 24, 2020, at 9:06 AM, Barras, Tommy <Tommy_Barras@reyrey.com> wrote:

Robert moved on quickly -- Cherry working on separation. Severance $$'s will be high -- Bob will not be happy -- but I need to be happy. Peace will be expensive

Tommy

-----Original Message-----
From: Jackson, Jim <Jim_Jackson@reyrey.com>
Sent: Tuesday, November 24, 2020 8:44 AM
To: Barras, Tommy <Tommy_Barras@reyrey.com>
Subject: Robert

Tommy:

I'm curious about how the "your proposal isn't going to work" meeting with Robert went yesterday.

Jim

Dr. Jim Jackson
Corporate Coach, Reynolds and Reynolds
6700 Hollister Street
Room 204 A
Houston, TX. 77040
Jim_Jackson@ReyRey.com
www.JimDailyAwakenings.com (daily email) Office (713) 718-1851 (direct number)
(713) 718-1800; EXT. 72245
Cell (713) 377-1070

Gov. Ex. 147

Message

From: Bales, Mark F [Mark_Bales@reyrey.com]
Sent: 2/16/2021 3:39:58 PM
To: Barras, Tommy [Tommy_Barras@reyrey.com]
CC: Burnett, Robert [Robert_Burnett@reyrey.com]
Subject: RE: Global Ops Data - January

Tommy,

We do not typically work up an invoice for Bob for his portion of costs. As a 1% partner, he has already contributed capital to the company and—as long as the entity remains solvent—would not be required to pay anything additional related to normal operations. There are times in the past where both he and Reynolds have had to make additional capital contributions (most recently April 2019).

We will work on Hardwicke's 2020 federal tax return in the coming weeks and will have to provide a K-1 to Bob in the near future to report his 1% share of the results. I'm hopeful we have this ready to go by mid-March.

I want to be clear on your request below-- Do you want a summary of some type that you can use to demonstrate the typical annual costs of the Global? Will the K-1 be sufficient to show Bob's share? Or do you want something else altogether?

Thanks
Mark

Mark Bales
Finance Director
Dayton **937.823.0400 (cell)**

From: Barras, Tommy <Tommy_Barras@reyrey.com>
Sent: Friday, February 12, 2021 8:28 AM
To: Bales, Mark F <Mark_Bales@reyrey.com>
Subject: FW: Global Ops Data - January

Mark

Are you working up an Invoice to Bob from Hardwicke for his portion of costs in supporting Global..?

Goal is not collect – is to show him the expenses of his 1% ownership.

Guessing 2020 does not represent true usage of aircraft. Use 2019 as baseline – or the busiest usage year (which is greatest) to demonstrate this point – Global expenses really high

Tommy

GOVERNMENT EXHIBIT
4:21-CR-009-GCH
No. 147

From: Zeto, Charles <Charles_Zeto@reyrey.com>
Sent: Thursday, February 11, 2021 3:33 PM
To: Barras, Tommy <Tommy_Barras@reyrey.com>
Cc: Uribe, Daniel <Daniel_Uribe@reyrey.com>; Guthrie, Larry <Larry_Guthrie@reyrey.com>; Kaufman, William K <William_Kaufman@reyrey.com>; Robinson, Sheri <Sheri_Robinson@reyrey.com>; Skidmore, William R (Bill) <William_Skidmore@reyrey.com>
Subject: Global Ops Data - January

GOVERNMENT EXHIBIT
11-16 147

RB-00010403

Tommy,

Attached are the Global ops data for January.

Please let me know if you have any questions or concerns.

Charlie

Gov. Ex. 148

Message

From: tommybarras@reyrey.com [tommybarras@reyrey.com]
Sent: 6/19/2020 10:04:11 PM
To: Jim Jackson (jim_jackson@reyrey.com) [jim_jackson@reyrey.com]
Subject: FW: New For Business Fact Sheet
Attachments: STA Ford New Business Location.doc

Issue Robert and I are on opposites sides of fence. You did turned everyone on committee against my plan – but we moving.

Bob advised me every step of way – he predicted every step that Robert would take and how I should react. Bob called it perfectly.

End not yet decided – we are watching Robert's behavior

Tommy

From: tommybarras@reyrey.com <tommybarras@reyrey.com>
Sent: Wednesday, June 17, 2020 6:33 PM
To: 'Burnett, Robert' <Robert_Burnett@reyrey.com>
Subject: RE: New For Business Fact Sheet

Robert

Reviewed your facts sheet to ensure I understood the risks from our experts. Reviewed again again the pro's and con's, spoke with ExCom members + my advisors, and digested the feedback I received.

My decision is to install the new Ford STA business in College Station. The risks described do not change the most important fact – College Station is our future; I will protect it; I will show our College Station associates their responsibilities will increase.

As I stated at first ExCom meeting – ExCom is not a board of directors. Everyone's buys is important & always the goal; but there will be decisions made that are not supported by the majority. This is the first – hopefully not many. Only time will prove this a wise decision or not.

I am committed to this decision; if Ford decides to back away from the deal because College Station is consider the wrong environment then the business is not worth having.

Rick + Atlanta leaderships turn their attention to planning a successful installation in College Station. Rick to inform Ford of our decision ASAP; to order equipment needed + ship to College Station; begin recruiting for the staff needed to support new business in College Station.

I'm not declaring an end to Atlanta today – migration away from Atlanta will take years. But College Station begins learning this business to give us options in the future. Atlanta's commitment to this initiative will define the pace of migration – delays or obstacles will only push us to migration sooner than later.

Acquisition merging into the core should always be the first option – this is who we are. There will be acquisition that to do not follow this game plan – ADD, IDS, Tampa but those are warts. SecureTA

would be stronger, I believe, if the business would have been consolidated years ago – no way to know for sure.

All need to get on-board quickly – planning must begin immediately. I want to see planning documents as soon as possible.

Tommy

Ps. I will communicate my decision to ExCom in the morning after giving you the evening to digest.

From: Burnett, Robert <Robert_Burnett@reyrey.com>
Sent: Monday, June 15, 2020 7:08 PM
To: tommy_barras@reyrey.com
Subject: New For Business Fact Sheet

Tommy:

As I committed, here is the Fact Sheet on the decision for location of new Ford business for STA.

As this is a very significant decision for Reynolds, I would expect that I should send this to the ExCom and then we should have a live discussion.

Ready to discuss when you are.

Thanks,

Robert

Robert Burnett
Executive Vice President, Corporate Development
The Reynolds and Reynolds Company
Phone: 713-718-1418
Mobile: 713-882-0019

Gov. Ex. 149

Message

From: tommybarras@reyrey.com [tommybarras@reyrey.com]
Sent: 8/6/2020 10:20:58 PM
To: 'Jackson, Jim' [Jim_Jackson@reyrey.com]
Subject: RE: Letter to Tommy

Jim

No ignoring you -- your suggestion are in the works. Video to Associates with me occurring now....Small meeting with Master Sergeants started but halted with recent legal distractions -- Pam will ensure I stay on schedule. Legal crap gets worse every day -- the past 10 days have introduced even more crap. It's crazy.....

Communications with ExCom is very important to me -- but Bob warns me frequently not to get into debates or allow the group to vote on topics -- that become very dangerous. Not sure I agree totally but there have been situation recently where voting would have caused wrong results.

I can I assure you Bob is involved in EVERY important decision being made. We talk about ExCom opinions and whether to allow feedback or not. These are frequent conversations.

I want to do right -- and conflicted between the old and new. Finding the balance is my greatest challenge.

I made the decision to have 7 at the table -- today I wish I would have kept the number smaller. The message would have been easier to disseminate. But I'm here -- need to figure out how to make it work.

Chasing off those not bought in will not be easy -- complexity created before my time will be hard to undo. What worries me the most is the damage done to Bob during more Legal battles. I cannot create more of these -- I'll live with the pain to protect Bob. It will work out

Keep coaching -- please

Tommy

-----Original Message-----
From: Jackson, Jim <Jim_Jackson@reyrey.com>
Sent: Wednesday, August 5, 2020 2:11 PM
To: Barras, Tommy <Tommy_Barras@reyrey.com>
Subject: Letter to Tommy

Tommy:

Attached is a letter from me. Let me know if you have questions or if you' d like to discuss it.

Love you, man.

Jim

GOVERNMENT EXHIBIT
4:21-CR-009-GCH
No. 149

GCM

GOVERNMENT EXHIBIT
149

Gov. Ex. 150

Message

From: tommy_barras@reyrey.com [tommy_barras@reyrey.com]
Sent: 2/1/2021 4:37:52 PM
To: 'Robert Burnett' [robert_burnett@reyrey.com]
Subject: RE: Brockman Retirement Benefit

Being advised to do similar plan for Nalley – but he must retire. Not close to same yearly numbers.

Do not discuss Nalley plan with anyone

Tommy

From: Robert Burnett <robert_burnett@reyrey.com>
Sent: Monday, February 1, 2021 10:29 AM
To: tommy_barras@reyrey.com
Subject: RE: Brockman Retirement Benefit

Since this is now a known (or about to be) obligation of the company, we need to book that liability.

Our outside firm has looked at Bob and Dorothy's ages and actuarially determined how long it is anticipated that we will pay this obligation and then they calculate the present value of that to determine the liability to book.

So, it is booked as a debit to expense and a credit to this long term pension liability.

We can talk live about it more.

Robert Burnett
Executive Vice President, Corporate Development
The Reynolds and Reynolds Company
Phone: 713-718-1418
Mobile: 713-882-0019

GOVERNMENT EXHIBIT
4:21-CR-009-GCH
No. 150

GOVERNMENT EXHIBIT
150

From: tommy_barras@reyrey.com <tommy_barras@reyrey.com>
Sent: Monday, February 1, 2021 10:15 AM
To: 'Robert Burnett' <robert_burnett@reyrey.com>
Subject: RE: Brockman Retirement Benefit

Have no idea where this number comes from – would love to give Bob and Dorothy this number but that's not close to reality.....

RB-00010447

You must educate me

Tommy

From: Robert Burnett <robert_burnett@reyrey.com>
Sent: Monday, February 1, 2021 9:30 AM
To: Barras, Tommy <Tommy_Barras@reyrey.com>
Subject: FW: Brockman Retirement Benefit

Tommy:

Please see below and attached.

We are going to take a $150 million bit to the 2020 financials for accruing the liability for Bob's retirement.

We need to discuss this live as this is the type of thing that in the past would be adjusted and not impact Plan C or executive bonuses paid on EBITDA.

Robert

Robert Burnett
Executive Vice President, Corporate Development
The Reynolds and Reynolds Company
Phone: 713-718-1418
Mobile: 713-882-0019

From: Bales, Mark F <Mark_Bales@reyrey.com>
Sent: Sunday, January 31, 2021 9:11 AM
To: Burnett, Robert <Robert_Burnett@reyrey.com>
Subject: Brockman Retirement Benefit

Robert,

We received the valuation of Bob's retirement agreement late Friday and it's coming in at just under **$150M**. I wanted you to be aware since this is quite a bit above the initial $75M - $100M ballpark figure they gave us.

We will record this full expense in 2020 and set up a liability, which the monthly payments will go against. At the end of each year we will then have to re-adjust the remaining liability (+ or -) based on then-current NPV and mortality calculations.

Are you OK with the $150M? We could ask Towers Watson to tweak some of the assumptions if we want to try to bring the number down some, but the fact is interest rates are so low there really isn't much of a discount given to the out years. I'm not sure how much lower they'd be able to get it.

Thanks
Mark

Mark Bales
Finance Director
Dayton **937.823.0400 (cell)**

Gov. Ex. 151

Message

From: tommy_barras@reyrey.com [tommy_barras@reyrey.com]
Sent: 11/5/2020 2:53:23 PM
To: Pam Lugo (Pam_Lugo@reyrey.com) [Pam_Lugo@reyrey.com]
Subject: FW: My Note to Offices 2020.Nov5
Attachments: My Note to Offices 2020.Nov5.docx

Jim's version better – combine with mine. [redacted]

Tommy

From: Jackson, Jim <Jim_Jackson@reyrey.com>
Sent: Thursday, November 5, 2020 8:13 AM
To: Barras, Tommy <Tommy_Barras@reyrey.com>
Subject: My Note to Offices 2020.Nov5

Tommy:

Here is a slightly altered version of what your wrote. I'm concerned that some of the things you wrote could be used against you—"I have many doubts what the future holds for me." Also, what you wrote requires a second email, saying who's in charge.

Jim

Dr. Jim Jackson
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GOVERNMENT EXHIBIT
4:21-CR-009-GCH
No. 151

GOVERNMENT EXHIBIT 151

Today is a sad day for our Company. It is one of the saddest days of my life personally.

Today Bob Brockman will retire as C.E.O of Reymolds and Reynolds and from its Board of Directors. He will be taking medical disability. I cannot put into words the pain it gives me to deliver this message to you, my fellow Officers of Reynolds and Reynolds.

Bob Brockman worked tirelessly for 50 years to create the great company Reynolds and Reynolds is today. Along the way, he formed dozens of great auxiliary companies.

Bob was the greatest leader any of us will ever know. His wisdom and work ethic set the highest possible standard for us. But just as important, he was our mentor, supporter, and friend—almost a father figure. As a result, each of us strove to be productive and to do the quality of work that pleased him.

Today I am to be named Bob's successor. It is a role that I never sought but will do my best to fulfill. I am not Bob Brockman – not even close. But I use the skills Bob taught me to lead the company into the bright future it deserves. I will give my all to make Bob proud of me.

I challenge you to join me in making Reynolds and Reynolds the legacy Bob Brockman deserves. Because of the pandemic, the divided political climate, and other factors, these are challenging times. Let's decide now to move forward with even more determination to make the heritage Bob left us even greater.

We will never forget Bob Brockman - his vision, drive, care, and leadership. And the best way to honor him is by using the skills he taught us to make Reynolds and Reynolds an even greater company.

Tommy Barras

Message

From: tommy_barras@reyrey.com [tommy_barras@reyrey.com]
Sent: 12/24/2020 10:29:21 PM
To: Lisa Barras (barraslisa@earthlink.net) [barraslisa@earthlink.net]
Subject: FW: Folks have been fighting about Jesus since the beginning! Merry Christmas!
Attachments: Trouble In The Manger 748BEE2C-C654-4159-8601-A64A036D92B0.mov

From: Jackson, Jim <Jim_Jackson@reyrey.com>
Sent: Thursday, December 24, 2020 3:06 PM
To: Barras, Tommy <Tommy_Barras@reyrey.com>; Lugo, Pam <Pam_Lugo@reyrey.com>; Dorothy Kay Brockman <dorothyhbrockman@outlook.com>; Brockman, Bob <Bob_Brockman@reyrey.com>; Robert & Elizabeth Brockman <Robert@firehead.org>; Elizabeth Bellows Brockman <ebellows@gmail.com>
Subject: Folks have been fighting about Jesus since the beginning! Merry Christmas!

Dr. Jim Jackson
Corporate Coach, Reynolds and Reynolds
6700 Hollister Street
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(713) 718-1800; EXT. 72245
Cell (713) 377-1070

Message

From: tommy_barras@reyrey.com [tommy_barras@reyrey.com]
Sent: 10/23/2021 1:53:54 PM
To: Lisa Barras (barraslisa@earthlink.net) [barraslisa@earthlink.net]
Subject: FW: Great doc for back pain

Comments from the CEO of Methodist on the Dr recommended by Finnila

Tommy

From: Steve Stephens <Steve.Stephens@amegybank.com>
Sent: Friday, October 22, 2021 7:50 PM
To: tommy_barras@reyrey.com; Jim Jackson <jim_jackson@reyrey.com>
Subject: Re: Great doc for back pain

From Marc Boom

He is amazing! Cannot go wrong with him. He is in a private group, but he is amazing!

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From: Steve Stephens <Steve.Stephens@amegybank.com>
Sent: Friday, October 22, 2021 4:12:09 PM
To: tommy_barras@reyrey.com <tommy_barras@reyrey.com>; Jim Jackson <jim_jackson@reyrey.com>
Subject: Re: Great doc for back pain

I will check with Marc Boom and make sure he is the best. Stand by.

Get Outlook for iOS

From: tommy_barras@reyrey.com <tommy_barras@reyrey.com>
Sent: Friday, October 22, 2021 4:07:15 PM
To: Steve Stephens <Steve.Stephens@amegybank.com>; Jim Jackson <jim_jackson@reyrey.com>
Subject: RE: Great doc for back pain

Steve, Jim

You heard of Neuro Surgeon (looks like I need back surgery) at Methodist – Dr. Andrew Roeser..?

https://www.neurosurgery-texas.com/physicians/andrew-c-roeser-md/

Tommy

From: Steve Stephens <Steve.Stephens@amegybank.com>
Sent: Wednesday, October 20, 2021 9:20 AM
To: Tommy Barras (tommy_barras@reyrey.com) <tommy_barras@reyrey.com>
Subject: Great doc for back pain

Get Outlook for iOS

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Message

From: tommybarras@reyrey.com [tommybarras@reyrey.com]
Sent: 8/1/2020 5:18:06 PM
To: Keith Hill (Keith_Hill@ReyRey.com) [Keith_Hill@ReyRey.com]
Subject: FW: The Implications of Working Without an Office

Forward to the group....

From: Keith Hill <keith_hill@reyrey.com>
Sent: Saturday, August 1, 2020 12:00 PM
To: 'Jackson, Jim' <Jim_Jackson@reyrey.com>
Cc: 'Barras, Tommy' <Tommy_Barras@reyrey.com>
Subject: RE: The Implications of Working Without an Office

Jim
Thank you for sending this. I think this was a valuable read. It isn't a complete study (but it admits this). It does, however bring forth some ideas we need to consider.

Tommy – I think this could be good reading for ExCom.

Keith Hill
281-380-9574

From: Jackson, Jim [mailto:Jim_Jackson@reyrey.com]
Sent: Saturday, August 1, 2020 8:34 AM
To: Hill, Keith <Keith_Hill@reyrey.com>
Cc: Barras, Tommy <Tommy_Barras@reyrey.com>
Subject: The Implications of Working Without an Office

Keith:

Thought you might want to read this.

Jim

https://hbr.org/2020/07/the-implications-of-working-without-an-office

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(713) 718-1800; EXT. 72245
Cell (713) 377-1070

Message

From: tommybarras@reyrey.com [tommybarras@reyrey.com]
Sent: 9/7/2020 8:14:10 PM
To: 'Keith Hill' [keith_hill@reyrey.com]
Subject: RE: Hey

Understand.....others in our world will suffer with this disease so best learn how to deal with

Tommy

From: Keith Hill <keith_hill@reyrey.com>
Sent: Monday, September 7, 2020 3:08 PM
To: tommybarras@reyrey.com; 'Jackson, Jim' <Jim_Jackson@reyrey.com>
Subject: RE: Hey

He is still struggling with the tremors and being around people. In some ways, he has withdrawn. It may help to have Jim reach out as well. Mike is a private person, but we all need that.

Keith Hill
281-380-9574

From: tommybarras@reyrey.com [mailto:tommybarras@reyrey.com]
Sent: Monday, September 7, 2020 3:03 PM
To: Keith Hill <Keith_Hill@ReyRey.com>; Jim Jackson <jim_jackson@reyrey.com>
Subject: FW: Hey

FYI....

From: Mike Behm <michaelbehm99@gmail.com>
Sent: Monday, September 7, 2020 2:48 PM
To: tommy_barras@reyrey.com
Subject: Re: Hey

Tommy

Thank you, that means SO much. With all you have on your plate right now, it truly means the world to me!

Keep the prayers coming!!

Highest regards!

Mike

On Mon, Sep 7, 2020 at 1:21 PM <tommy_barras@reyrey.com> wrote:

> Mike

Just wanted to say hello – check in on you. Hope retirement has reduce stress; reduce pains; provided you and family peace.

I pray for you my friend.

Tommy

--
Mike Behm

Message

From: tommybarras@reyrey.com [tommybarras@reyrey.com]
Sent: 10/23/2020 10:17:56 PM
To: Pam Lugo (Pam_Lugo@reyrey.com) [Pam_Lugo@reyrey.com]
Subject: FW: Executive Chief of Staff

Jim loves you.....LOTS

Tommy

-----Original Message-----
From: Jackson, Jim <Jim_Jackson@reyrey.com>
Sent: Friday, October 23, 2020 3:48 PM
To: Barras, Tommy <Tommy_Barras@reyrey.com>
Subject: Re: Executive Chief of Staff

Makes my day!

Dr. Jim Jackson
Corporate Coach, Reynolds and Reynolds
6700 Hollister Street
Room 204 A
Houston, TX. 77040
Jim_Jackson@ReyRey.com
www.JimDailyAwakenings.com (daily email) Office (713) 718-1851 (direct number)
(713) 718-1800; EXT. 72245
Cell (713) 377-1070

> On Oct 23, 2020, at 2:53 PM, Barras, Tommy <Tommy_Barras@reyrey.com> wrote:
>
>
>
> -----Original Message-----
> From: Bob Brockman <Bob_Brockman@reyrey.com>
> Sent: Friday, October 23, 2020 2:07 PM
> To: Tommy Barras <Tommy_Barras@reyrey.com>; Rob Nalley
> <rob_nalley@reyrey.com>; Robert Burnett <Robert_Burnett@reyrey.com>;
> Willie Daughters <willie_daughters@reyrey.com>; Eric Edwards
> <eric_edwards@reyrey.com>; Keith Hill <Keith_Hill@reyrey.com>; Scott
> Santana <Scott_Santana@ReyRey.com>; Chris Walsh
> <Christopher_Walsh@reyrey.com>; Pam Lugo <pam_lugo@reyrey.com>; Craig
> Moss <Craig_Moss@reyrey.com>
> Subject: Executive Chief of Staff
>
> Pam Lugo's title is now Executive Chief of Staff to President and COO Tommy Barras. She must attend all
ExCom meetings in their entirety.
>
> Bob
>
>
>

Gov. Ex. 152

[redacted]

From: Jackson, Jim <Jim_Jackson@reyrey.com>
Sent: Thursday, December 3, 2020 1:37 PM
To: Barras, Tommy <Tommy_Barras@reyrey.com>
Subject: Two IRS Agents

Tommy:

Two IRS agents, Ryan D. Rickey and Evan Garrett, showed up at my door unannounced this morning. I did not allow them into my house because of Susan's coronavirus (actually I am out of quarantine today), but we talked via cell phone for about 40 minutes. After the conversation I called Tim Johnson and went over the conversation with him. They mainly wanted to know about how the Reynolds handover took place—who named you CEO, who put me on the Board, what happened to Nalley and Deaton. I was purposefully evasive and uncertain. They also wanted copies of the documents we signed at Bob's house. I referred them to Tim. I did a good job of answering their questions without over-answering. I certainly said nothing that could have deepened Bob's problems and added problems for you. They wanted to know why Bob named you you CEO. I gave them a good answer. And I told them that when I found out the Trust owned the company, I asked you about it and you said, "I know nothing about the Trust, I don't want to know and you don't need to know." I told them that was good enough for me. They wanted to know how the Board would function and whether others members would be added. I told them we would soon formally organize and keep minutes and that I was sure other Board members would be added in time.

I volunteered that Bob Brockman worked 90 hours a week for years—that he handled Reynolds business details that no other CEO in America would touch. And I would never believe that he had time to I do all the things he was accused of doing. I thought he had been set up by people who used him and then turned states evidence against him to save their own skin. I don't think I sold them, but they at least listened.

That's about it. [redacted] All in all, it was relaxed, and went well.

Jim

Dr. Jim Jackson
Corporate Coach, Reynolds and Reynolds
6700 Hollister Street
Room 204 A
Houston, TX. 77040
Jim_Jackson@ReyRey.com
www.JimDailyAwakenings.com (daily email) Office (713) 718-1851 (direct number)
(713) 718-1800; EXT. 72245
Cell (713) 377-1070

GOVERNMENT EXHIBIT
4:21-CR-009-GCH
No. 152

GOVERNMENT EXHIBIT
152

Gov. Ex. 156

HOUSTON METHODIST
SERVICE AREA
6560 Fannin Street
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M

Patient

Demographics

Name: Robert T Brockman
Address: [redacted] HOUSTON TX 77027
Date of birth: [redacted]1941
Sex: Male
Gender identity: Male
Ethnicity: Not Hispanic or Latino
Race: Caucasian
Email: BOB_BROCKMAN@REYREY.COM
Home phone: 713-680-9635
Work phone: 917-576-2721
Mobile: 713-412-9916

Relationships

Name	Relation to Patient	Phone Number
Brockman, dorothy	Spouse	Mobile: 713-516-1270 (primary) Home: 713-516-1270

Immunizations

No documentation.

Advance Care Planning

Plan

Patient Capacity

The patient has full capacity. There is no history of patient status change.

Current Code Status

Date Active	Code Status	Order ID	Comments	User	Context
Not on file					

Health Care Agents

There are no Health Care Agents on file.

Patient Contacts

Patient Contacts

Name	Relationship	Phone	Roles
Brockman, dorothy	Spouse	713-516-1270	

GOVERNMENT EXHIBIT
4:21-CR-009-GCH
No. 156

HOUSTON METHODIST
SERVICE AREA
6560 Fannin Street
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted] 1941, Sex: M

Patient (continued)

Patient Level Scans

Notice of Privacy Practice

Electronic signature on 2/2/2021 9:14 AM (effective from 2/2/2021 expires 1/31/2027) - E-signed

Patient (continued)

Patient Level Scans (continued)

HOUSTON METHODIST
JOINT NOTICE OF PRIVACY PRACTICES
ACKNOWLEDGMENT

You have been given the Notice of Privacy Practices for Houston Methodist. This Notice describes your legal rights regarding your health information and will inform you of the legal duties and privacy practices of Houston Methodist with respect to health information created for services generated at Houston Methodist. If you receive services by your physician or other health care provider at a different location, you may want to ask about that office or clinic's health information privacy policies and notices because they could be different.

Houston Methodist organizations and their medical staffs participate in an Organized Health Care Arrangement under Health Insurance Portability and Accountability Act (HIPAA) for the purpose of sharing protected health information for treatment, payment, and health care operations and are providing this Notice of Privacy Practices in one document for your convenience. Houston Methodist hospitals and their respective Medical Staff members are independently responsible for complying with this Notice.

Your name and signature below indicate that you have been provided with a copy of this Notice of Privacy Practices.
If you have declined a copy of this Notice, please initial here and sign below:

If you have a question regarding any of the information set forth in this Notice of Privacy Practices, please do not hesitate to call the Business Practices Officer at the location of interest or 713-383-5129.

Patient Name: **Robert T Brockman**

Signature of Patient or Patient's Qualified Personal Representative

February 2, 2021
Date

Printed Name of Qualified Personal Representative:

Legal Authority to Act on Behalf of the Patient:

Note: In the case of an Obstetrical patient, this signed acknowledgment for receipt of the Notice of Privacy Practices also serves as receipt of the Notice of Privacy Practices on behalf of the newborn(s).

For Staff Use Only

Date Acknowledgment noted in patient management system: _____

Comments if Notice not provided or Acknowledgment not obtained: _____

_____

Processed by: _____ Department:_____

HOUSTON METHODIST
SERVICE AREA
6560 Fannin Street
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M

Patient (continued)

Patient Level Scans (continued)

Patient (continued)

Patient Level Scans (continued)

PO - Consent for Treatment

Electronic signature on 2/2/2021 9:15 AM (effective from 2/2/2021 expires 2/1/2022) - 1 of 10 e-signatures recorded

Patient (continued)

Patient Level Scans (continued)

Houston Methodist Leading Medicine

CONSENT FOR MEDICAL TREATMENT & FINANCIAL RESPONSIBILITY

Consent to Medical Care

I, Robert T Brockman, knowing that I have a condition requiring medical care, voluntarily consent to routine hospital inpatient, hospital outpatient, and/or physician clinic care including nursing care, diagnostic procedures, evaluation, testing and medical treatment as ordered or directed by my physicians.

Consent to Treatment in an Educational Institution
Houston Methodist is an educational institution where, among those who attend patients are medical, nursing, and other health care personnel in training. Trainees may be present during care, may provide some care under appropriate supervision (unless ordered otherwise by the responsible physician), and may discuss my case in educational settings, always in compliance with Houston Methodist's policies protecting patient confidentiality. In addition, still or motion pictures, audio recordings, closed circuit television monitoring, and other images may be taken in the course of my treatment and care at Houston Methodist and may be used for educational purposes and in compliance with Houston Methodist's policies protecting patient confidentiality.

Consent to Use of Photography/Video/Recording for Treatment Purposes
Houston Methodist may utilize photography or video recording in the course of care for the purpose of patient treatment. If my physician or members of the care team take photographs or video recordings during the course of my treatment, I understand that those images will be stored as a part of my Houston Methodist medical record in accordance with Houston Methodist's policies protecting patient confidentiality.

In addition, I understand that my physician or other members of the care team may record conversations I have with him/her regarding my condition and possible treatments. This recording will be automatically summarized and put into notes for my physician or health care provider to review. Once summarized and approved by my physician or other health care provider, the recording will be erased and the summary notes will be stored in the Houston Methodist medical record. I have the right to ask my physician or care provider to not record all or part of any particular conversation. If I have visitors or family members in the room during a recorded conversation, I understand they may be recorded also.

Agreement to Pay
I agree to pay all charges resulting from services rendered by Houston Methodist as requested by me personally, by any guarantor or any attending physician(s) in accordance with the rates set out in the Hospital's Master Charge List and/or by Houston Methodist physician clinics, including any balance due for services not covered by any third party payor. If I am receiving care at a Houston Methodist physician office, I understand that all charges for services not covered by verified healthcare coverage are due and payable upon discharge or conclusion of a physician clinic visit in accordance with bills and invoices presented. If I am receiving inpatient care at a Houston Methodist Hospital, I agree that I am responsible for payment of all charges incurred after Houston Methodist or my third party payor informs me that inpatient care is no longer required should I decide to remain in the hospital. If my third party payor determines that I obtained unapproved services in an inappropriate setting, I will be responsible for payment of such charges. I am responsible for all charges incurred prior to informing Houston Methodist of my third party coverage. Provisional credit may be allowed for confirmed healthcare coverage benefits when assigned to Houston Methodist. All such credits are subject to collection by Houston Methodist unless coverage is subsequently denied in whole or in part.

In addition, I understand Houston Methodist may hire a third party to assist Houston Methodist in collecting payment from me. Both Houston Methodist and its third party contractor may contact me in writing or by calling me. Any calls will be made to the primary phone number Houston Methodist has on file for me. I understand that my primary number on file with Houston Methodist may be my cell phone number. In such case, I hereby expressly authorize Houston Methodist or any of its third party contractors to call my cell phone for billing and/or collection matters and that such calls may include automated calls.

I further agree that Houston Methodist and its third party vendors may call or text my cell phone with automated or recorded appointment reminders, preventive care services reminders, and post-discharge care communications. I may opt out of automated calls and text messages at any time. Consenting to automated calls and text messages regarding appointment reminders, preventive care services, and post-discharge care communications is not a requirement for receiving healthcare services from Houston Methodist.

Guarantor's Obligation
I, the undersigned Guarantor below, agree to guarantee payment and collection of all charges incurred by Patient. If Patient is unable to execute this document for any reason, I assume primary responsibility for payment of all charges incurred by Patient.

Patient (continued)

Patient Level Scans (continued)

Valuables Reminder
I understand that valuables and personal items I keep in my possession while at Houston Methodist may be at risk for loss or damage. Houston Methodist does not assume responsibility for personal property, including, but not limited to, jewelry, dentures, hearing aids, glasses, clothing, money, credit/debit cards, and cell phones. I have been encouraged to leave valuables at home or, if admitted to the hospital, deposit them in the hospital safe.

Prescription Drugs
I understand that Houston Methodist may utilize electronic prescription software in the event that medications are prescribed in the course of my treatment. I consent to use of this software to generate a history of medications previously prescribed to me which were billed to a third party payor.

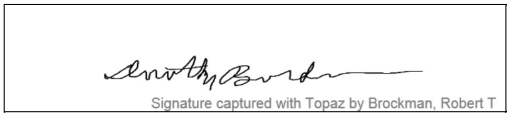
Health Information Exchange (HIE)
We may make your health information available electronically through an information exchange network to other providers involved in your care who request your electronic health information. The purpose of this information exchange is to support the delivery of safer, better coordinated patient care. Participation in the information exchange is voluntary. If you do not want your Houston Methodist health information to be accessible to authorized health care providers through the HIE, you may submit a signed non-participation (opt-out) form, available from your registration representative or www.houstonmethodist.org. If you decide not to participate, health care providers will not be able to access your health information through the HIE.

Important Information about Your Medical Records
Under State law, Houston Methodist may authorize the disposal of any medical record on or after the 10th anniversary of the date on which the patient was last treated by Houston Methodist. If the patient was younger than 18 years of age when last treated, Houston Methodist may authorize disposal of any medical records on the latter of the patient's 20th birthday or the 10th anniversary of the date the patient was last treated by Houston Methodist.

For this reason, Houston Methodist encourages patients to obtain copies of medical records if the patient wishes to retain them permanently. Medical records may be obtained through the Health Information Management department.

Assignment of Benefits
In consideration of the services rendered, the undersigned irrevocably assigns and transfers to Houston Methodist for himself/herself and dependents, all rights, title and interest in the claims or causes of action requiring benefits payable or reimbursements for the services rendered by Houston Methodist provided in any insurance policy(ies) or benefit plan. This irrevocable assignment and transfer shall be for the purpose of granting Houston Methodist independent right of recovery on the aforementioned claims, policy(ies) of insurance or benefit plan against any third party but shall not be construed to be an obligation of Houston Methodist to pursue any such claim or right of recovery. The undersigned hereby assigns to Houston Methodist all right, title, and interest in all claims or irrevocable benefits payable or reimbursements out of any third party action against any other person, entity, or insurance company, or out of recovery under the uninsured/underinsured motorist provisions of the medical payment provisions of any automobile insurance policy(ies) under which the patient may be entitled to recover. The undersigned further authorizes and appoints Houston Methodist as an authorized representative to pursue any claim to which he/she may be entitled to pursue or otherwise assert to obtain benefits or reimbursements from any responsible party, but in no event shall this be construed to be an affirmative obligation of Houston Methodist to pursue any such claim(s). The undersigned understands that if Houston Methodist is not paid in full by proceeds of any insurance policies, benefit plans or other sources of funds, then this assignment does not release his/her obligation and liability to Houston Methodist for payment of services and items provided by Houston Methodist.

I understand that this consent form will be valid and remain in effect as long as I receive my medical care at Houston Methodist. I understand that this consent may be revoked in writing at any time.



*Signature

February 2, 2021
Date

*If the patient is not competent to consent to medical treatment, thus precluding signing, please indicate the reason below:

	Minor (under 18, not pregnant or married)		Mentally Incompetent
	Unconscious		Other Physical Condition
	Patient Unable to Sign		

Patient (continued)

Patient Level Scans (continued)

Qualified Personal Representative

February 2, 2021
Date

Legal Authority to Act on Behalf of Patient

QPR Authentication Method

Authenticated by (Name/Dept Name – print)

Encounter: 2100089907549	Admit Date: 2/2/2021	Page 1 of 1
Patient Name: BROCKMAN, ROBERT T	Marital Stat: Married [2]	
DOB: [redacted]1941	Att Physician: Lai, Eugene C., MD	
Sex: Male	Patient Class:	

Patient (continued)

Patient Level Scans (continued)

Patient (continued)

Patient Level Scans (continued)

PO Add - Consent for Treatment

Electronic signature on 2/2/2021 9:15 AM (effective from 2/2/2021 expires 2/1/2022) - E-signed

Patient (continued)

Patient Level Scans (continued)

Houston **Methodist** Leading Medicine

FOR HMSPG & HMPCG CLINIC USE

ADDENDUM TO
CONSENT FOR MEDICAL TREATMENT
& FINANCIAL RESPONSIBILITY

Insurance Coverage
I understand that I am responsible for confirming with my insurance company that the physician is currently under contract with my plan. If the insurance plan requires a referral and I or my provider have not provided one by the scheduled appointment time, I will be prepared to pay for the visit in full or reschedule.

Late Arrivals
Houston Methodist physicians work diligently to keep to scheduled appointment times. When a patient arrives late, it is impossible to maintain the schedule. I understand that if I arrive more than 20 minutes past the scheduled appointment time, I may be rescheduled so that other patients are not inconvenienced.

Check-In
I understand that filling out all required paperwork prior to my first appointment is important. This includes all information requested on both the Patient Information and Medical History Forms. Completion of the forms in advance of my first appointment will avoid delays in creating a chart and account at the initial visit. I understand that I should arrive at least 15 minutes prior to the scheduled appointment time so that all paperwork may be completed BEFORE seeing the physician. Although benefits are verified before the initial appointment, current insurance card(s) and a valid photo ID should be presented at check-in to verify identity. This ensures that all information is entered accurately and prevent errors in filing claims. Without an insurance card, Houston Methodist is unable to file with insurance, and the patient will be responsible for the day's charges. On EACH follow-up visit, the patient will be asked to verify demographic and insurance information so that records remain up-to-date. **All co-payments will be collected at the time of service.**

Return Check Fee
I understand there will be a return check fee of $30.00 posted to my account for all checks returned due to insufficient funds or closed accounts.

Check-Out
I understand that payment for all co-payments and deductibles is due at the time of service. Typically, only an office visit charge is covered by the co-payment, and any additional services or treatment are subject to the specific details of the patient's insurance plan.

Non-Covered Services
I understand that an Insurance Waiver may be required to acknowledge understanding of responsibility for paying for non-covered services depending on the patient's insurance plan. If the visit is for non-covered services, I understand I will be responsible for paying for the visit in full.

No-Shows and Late Cancellations
Houston Methodist requires a 24-hour advance notice if the patient must cancel his/her appointment. For the convenience of our patients, Houston Methodist offers appointment reminder calls 48 hours prior to appointments which allows for cancellation or rescheduling. If I do not show for my appointment, I understand that I may be subject to a $25.00 fee.

Minors
Parent(s) or guardian(s) of minor patients must accompany the minor for the visit unless a parent or guardian has signed a consent allowing for the minor patient to attend the physician visit on his or her own.

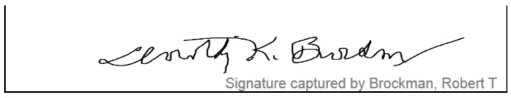
Telephone Consultation After Hours
I understand that if I request an urgent consultation with my provider after normal business hours resulting in a telephone encounter, I may be charged $25.00 for the physician's time and service. This fee will be my responsibility and will be charged to my patient account. The provider will notify the patient prior to discussing any services which require the fee.

I understand that this consent form will be valid and remain in effect as long as I receive my medical care at Houston Methodist. I understand that this consent may be revoked in writing at any time.

Signature _____ February 2, 2021

Patient (continued)

Patient Level Scans (continued)



*Signature

Date

*If the patient is not competent to consent to medical treatment, thus precluding signing, please indicate the reason below:

	Minor (under 18, not pregnant or married)		Mentally Incompetent
	Unconscious		Other Physical Condition
	Patient Unable to Sign		

Qualified Personal Representative

February 2, 2021
Date

Legal Authority to Act on Behalf of Patient

QPR Authentication Method

Authenticated by (Name/Dept Name – print)

Patient (continued)

Patient Level Scans (continued)

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 3/19/2021

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider
Lai, Eugene C., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of Neurology	6560 Fannin Street Suite 802 Houston TX 77030-2725	713-441-3780	713-790-5079

Research Study Linked to Orders Only on 3/19/2021

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 3/19/2021

Problems last reviewed by Lai, Eugene C., MD on 2/3/2021 0759

Altered mental status *[last edited by Escleto, Mary Yvette, RN on 3/15/2021 1232]*

Diagnosis: Altered mental status | Noted on: 03/15/2021 | Chronic: No

AMS (altered mental status) *[last edited by Bakshy, Aric Gill, MD on 3/15/2021 0921]*

Diagnosis: AMS (altered mental status) | Noted on: 03/15/2021 | Chronic: No

Bacteremia *[last edited by Patel, Amitkumar Natvarlal, MD on 3/16/2021 0859]*

Diagnosis: Bacteremia | Noted on: 03/16/2021 | Chronic: No

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Idiopathic peripheral neuropathy *[last edited by Lai, Eugene C., MD on 2/21/2020 2038]*

Diagnosis: Idiopathic peripheral neuropathy | Noted on: 02/21/2020 | Chronic: No

[redacted] *[last edited by Lai, Eugene C., MD on 2/21/2020 2037]*

Diagnosis: [redacted] | Noted on: 02/21/2020 | Chronic: No

Parkinson disease (HCC) *[last edited by Bingley, Desiree Y, RN on 3/18/2021 1611]*

Diagnosis: Parkinson disease (HCC) | Noted on: 03/18/2021 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 3/19/2021

Allergies last reviewed by Smit, Nicola, RN on 3/15/2021 1758
No Known Allergies

History as of 3/19/2021

Medical History as of 3/19/2021

Medical last reviewed by Winn, Kiziah, RN on 3/15/2021

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

None

Surgical History as of 3/19/2021

Surgical last reviewed by Winn, Kiziah, RN on 3/15/2021
None

Substance & Sexuality History as of 3/19/2021

Tobacco Use as of 3/19/2021

Tobacco Use last reviewed by Winn, Kiziah, RN on 3/15/2021

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
—	—	Never Used	—	Provider

Alcohol Use as of 3/19/2021

Alcohol Use last reviewed by Winn, Kiziah, RN on 3/15/2021

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 3/19/2021

Drug Use last reviewed by Winn, Kiziah, RN on 3/15/2021

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 3/19/2021

Sexual Activity last reviewed by Winn, Kiziah, RN on 3/15/2021

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 3/19/2021

Occupational as of 3/19/2021

Occupational last reviewed by Winn, Kiziah, RN on 3/15/2021
None

Socioeconomic as of 3/19/2021

Socioeconomic last reviewed by Winn, Kiziah, RN on 3/15/2021

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or	Caucasian	—

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Latino

Social Documentation History as of 3/19/2021

Social Documentation last reviewed by Winn, Kiziah, RN on 3/15/2021
None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Smit, Nicola, RN on 3/15/2021 1759

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 3/13/2019
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021
Informant: Family Member

rosuvastatin (CRESTOR) 5 mg tablet *[reconciled by Pena, Flor, MA on 2/2/2021 0921]*

Instructions: Take 5 mg by mouth daily.
Entered by: Pena, Flor, MA
Entered on: 2/2/2021
Start date: 11/10/2020
Informant: Family Member

Myrbetriq 50 mg tablet extended release 24 hr *[reconciled by Pena, Flor, MA on 2/2/2021 0921]*

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Instructions: Take 50 mg by mouth daily.
Entered by: Pena, Flor, MA — Entered on: 2/2/2021
Start date: 12/14/2020 — End date: 6/1/2021
Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet *[patient reported]*

Instructions: Take 2 tablets by mouth 3 (three) times a day.
Entered by: Guandique, Zulma — Entered on: 3/15/2021
Informant: Family Member

rivastigmine (EXELON) 9.5 mg/24 hr *[patient reported]*

Instructions: Place 1 patch on the skin daily.
Entered by: Guandique, Zulma — Entered on: 3/15/2021
Informant: Family Member

apixaban (ELIQUIS) 2.5 mg tablet *[patient reported]*

Instructions: Take 2.5 mg by mouth 2 (two) times a day.
Entered by: Guandique, Zulma — Entered on: 3/15/2021
Informant: Family Member

ciprofloxacin (CIPRO) 500 MG tablet

Instructions: Take 1 tablet (500 mg total) by mouth 2 (two) times a day for 10 days.
Authorized by: Patel, Amitkumar Natvarlal, MD — Ordered on: 3/19/2021
Start date: 3/19/2021 — End date: 3/29/2021
Quantity: 20 tablet — Refill: No refills remaining

tamsulosin (FLOMAX) 0.4 mg capsule

Instructions: Take 1 capsule (0.4 mg total) by mouth daily with dinner for 30 days.
Authorized by: Patel, Amitkumar Natvarlal, MD — Ordered on: 3/19/2021
Start date: 3/19/2021 — End date: 4/18/2021
Quantity: 30 capsule — Refill: No refills remaining

Lactobacillus acidoph-L.bulgar (FLORANEX) 1 million cell tablet

Instructions: Take 1 tablet by mouth 3 (three) times a day for 30 days.
Authorized by: Patel, Amitkumar Natvarlal, MD — Ordered on: 3/19/2021
Start date: 3/19/2021 — End date: 4/18/2021
Quantity: 90 tablet — Refill: No refills remaining

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: One tablet by mouth at bedtime
Authorized by: Lai, Eugene C., MD — Ordered on: 3/19/2021
Start date: 3/19/2021 — End date: 6/19/2021
Action: Patient taking differently — Quantity: 90 tablet
Refill: No refills remaining

Stopped in Visit

None

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

clonAZEPAM (KlonoPIN) 0.5 MG tablet [419846811] (Active)

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Electronically signed by: **Lai, Eugene C., MD on 03/19/21 1522** Status: **Active**
Ordering user: Lai, Eugene C., MD 03/19/21 1522 Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD Ordering mode: Standard
Frequency: Routine 03/19/21 - 06/19/21 2359 Class: Normal
Admin instructions: One tablet by mouth at bedtime

Order Details

Order Details

Priority	Expected	Study Status
Routine	3/19/2021 3:22 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
03/19/21 1522	Sign	Lai, Eugene C., MD	
05/31/21 2056	Do Not Order for Admission	Ahmed, Yahya, MD	

clonAZEPAM (KlonoPIN) 0.5 MG tablet [419846811]

Dose, Route, Frequency: As Directed
Dispense Quantity: 90 tablet Refills: 0

Sig: One tablet by mouth at bedtime
Patient taking differently: Take 0.5 mg by mouth nightly as needed (Taking only if Patient can't sleep). One tablet by mouth at bedtime

Start Date: 03/19/21 End Date: 06/19/21
Written Date: 03/19/21 Expiration Date: 09/15/21

Providers

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

HOUSTON Methodist LEADING MEDICINE
HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 3/19/2021

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology
All Parent Orders (continued)

Medications - All Orders

clonAZEPAM (KlonoPIN) 0.5 MG tablet [419846811]

Electronically signed by: **Lai, Eugene C., MD on 03/19/21 1522**
Status: **Active**
Ordering user: Lai, Eugene C., MD 03/19/21 1522
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Standard
Frequency: Routine 03/19/21 - 06/19/21 2359
Class: Normal
Admin instructions: One tablet by mouth at bedtime

03/19/2021 - Orders Only in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #
3/19/2021 3:17 PM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100096593104

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 3/19/2021

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology

Visit Information

Contacts

	Type	Contact	Phone	User
03/19/2021 02:59 PM CDT	Interface (Incoming)	Briargrove Pharmacy - Houston, TX - 6435 San Felipe	713-783-5704	Interface, Surescripts In

Nursing Assessment

No Nursing Assessment available for this encounter.

Questionnaires

No completed forms available for this encounter.

Research Study Linked to Refill on 3/19/2021

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 3/19/2021

Problems last reviewed by Lai, Eugene C., MD on 2/3/2021 0759

Altered mental status *[last edited by Escleto, Mary Yvette, RN on 3/15/2021 1232]*

Diagnosis: Altered mental status | Noted on: 03/15/2021 | Chronic: No

AMS (altered mental status) *[last edited by Bakshy, Aric Gill, MD on 3/15/2021 0921]*

Diagnosis: AMS (altered mental status) | Noted on: 03/15/2021 | Chronic: No

Bacteremia *[last edited by Patel, Amitkumar Natvarlal, MD on 3/16/2021 0859]*

Diagnosis: Bacteremia | Noted on: 03/16/2021 | Chronic: No

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Idiopathic peripheral neuropathy *[last edited by Lai, Eugene C., MD on 2/21/2020 2038]*

Diagnosis: Idiopathic peripheral neuropathy | Noted on: 02/21/2020 | Chronic: No

[redacted] *[last edited by Lai, Eugene C., MD on 2/21/2020 2037]*

Diagnosis: [redacted] | Noted on: 02/21/2020 | Chronic: No

Parkinson disease (HCC) *[last edited by Bingley, Desiree Y, RN on 3/18/2021 1611]*

Diagnosis: Parkinson disease (HCC) | Noted on: 03/18/2021 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 3/19/2021

Allergies last reviewed by Smit, Nicola, RN on 3/15/2021 1758
No Known Allergies

History as of 3/19/2021

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Medical History as of 3/19/2021

Medical last reviewed by Winn, Kiziah, RN on 3/15/2021
None

Surgical History as of 3/19/2021

Surgical last reviewed by Winn, Kiziah, RN on 3/15/2021
None

Substance & Sexuality History as of 3/19/2021

Tobacco Use as of 3/19/2021

Tobacco Use last reviewed by Winn, Kiziah, RN on 3/15/2021

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
—	—	Never Used	—	Provider

Alcohol Use as of 3/19/2021

Alcohol Use last reviewed by Winn, Kiziah, RN on 3/15/2021

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 3/19/2021

Drug Use last reviewed by Winn, Kiziah, RN on 3/15/2021

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 3/19/2021

Sexual Activity last reviewed by Winn, Kiziah, RN on 3/15/2021

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 3/19/2021

Occupational as of 3/19/2021

Occupational last reviewed by Winn, Kiziah, RN on 3/15/2021
None

Socioeconomic as of 3/19/2021

Socioeconomic last reviewed by Winn, Kiziah, RN on 3/15/2021

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Social Documentation History as of 3/19/2021

Social Documentation last reviewed by Winn, Kiziah, RN on 3/15/2021
None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Smit, Nicola, RN on 3/15/2021 1759

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 3/13/2019
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021
Informant: Family Member

rosuvastatin (CRESTOR) 5 mg tablet *[reconciled by Pena, Flor, MA on 2/2/2021 0921]*

Instructions: Take 5 mg by mouth daily.
Entered by: Pena, Flor, MA
Entered on: 2/2/2021
Start date: 11/10/2020
Informant: Family Member

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Myrbetriq 50 mg tablet extended release 24 hr *[reconciled by Pena, Flor, MA on 2/2/2021 0921]*

Instructions: Take 50 mg by mouth daily.
Entered by: Pena, Flor, MA — Entered on: 2/2/2021
Start date: 12/14/2020 — End date: 6/1/2021
Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet *[patient reported]*

Instructions: Take 2 tablets by mouth 3 (three) times a day.
Entered by: Guandique, Zulma — Entered on: 3/15/2021
Informant: Family Member

rivastigmine (EXELON) 9.5 mg/24 hr *[patient reported]*

Instructions: Place 1 patch on the skin daily.
Entered by: Guandique, Zulma — Entered on: 3/15/2021
Informant: Family Member

apixaban (ELIQUIS) 2.5 mg tablet *[patient reported]*

Instructions: Take 2.5 mg by mouth 2 (two) times a day.
Entered by: Guandique, Zulma — Entered on: 3/15/2021
Informant: Family Member

ciprofloxacin (CIPRO) 500 MG tablet

Instructions: Take 1 tablet (500 mg total) by mouth 2 (two) times a day for 10 days.
Authorized by: Patel, Amitkumar Natvarlal, MD — Ordered on: 3/19/2021
Start date: 3/19/2021 — End date: 3/29/2021
Quantity: 20 tablet — Refill: No refills remaining

tamsulosin (FLOMAX) 0.4 mg capsule

Instructions: Take 1 capsule (0.4 mg total) by mouth daily with dinner for 30 days.
Authorized by: Patel, Amitkumar Natvarlal, MD — Ordered on: 3/19/2021
Start date: 3/19/2021 — End date: 4/18/2021
Quantity: 30 capsule — Refill: No refills remaining

Lactobacillus acidoph-L.bulgar (FLORANEX) 1 million cell tablet

Instructions: Take 1 tablet by mouth 3 (three) times a day for 30 days.
Authorized by: Patel, Amitkumar Natvarlal, MD — Ordered on: 3/19/2021
Start date: 3/19/2021 — End date: 4/18/2021
Quantity: 90 tablet — Refill: No refills remaining

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: One tablet by mouth at bedtime
Authorized by: Lai, Eugene C., MD — Ordered on: 3/19/2021
Start date: 3/19/2021 — End date: 6/19/2021
Action: Patient taking differently — Quantity: 90 tablet
Refill: No refills remaining

Stopped in Visit

None

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Medications

clonAZEPAM (KlonoPIN) 0.5 MG tablet [Pharmacy Med Name: clonazepam 0.5 mg tablet] [419846810] (Pending)

Electronically signed by: **Lai, Eugene C., MD on 03/19/21 1506** Status: **Pending**
Ordering user: Lai, Eugene C., MD 03/19/21 1506 Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Frequency: 03/19/21 - Until Discontinued Class: Normal
Pended by: Interface, Surescripts In 03/19/21 1459
Medication comments: This prescription was filled on 3/19/2021. Any refills authorized will be placed on file.

Order Details

Order Details

Priority	Expected	Study Status
	3/19/2021 3:06 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	Until Discontinued	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
03/19/21 1459	Pend	Interface, Surescripts In	
03/19/21 1506	Sign	Lai, Eugene C., MD	

clonAZEPAM (KlonoPIN) 0.5 MG tablet [Pharmacy Med Name: clonazepam 0.5 mg tablet] [419846810]

Dose, Route, Frequency: As Directed
Dispense Quantity: 30 tablet Refills: 1
Note to Pharmacy: This prescription was filled on 3/19/2021. Any refills authorized will be placed on file.

Sig: TAKE 1 TABLET BY MOUTH IN THE EVENING AT BEDTIME

Start Date: 03/19/21 End Date: --
Written Date: -- Expiration Date: --
Ordering Date: 03/19/21

Providers

Ordering Provider and Authorizing Provider:
Lai, Eugene C.
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Eliquis 2.5 mg tablet [419846809] (Pending)

Electronically signed by: **Lai, Eugene C., MD on 03/19/21 1506** Status: **Pending**

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Ordering user: Lai, Eugene C., MD 03/19/21 1506
Authorized by: Lai, Eugene C., MD
Frequency: 03/19/21 - Until Discontinued
Pended by: Interface, Surescripts In 03/19/21 1459
Reordered from: apixaban (ELIQUIS) 2.5 mg tablet

Ordering provider: Lai, Eugene C., MD

Class: Normal

Order Details

Order Details

Priority	Expected	Study Status
	3/19/2021 3:06 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	Until Discontinued	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
03/19/21 1459	Pend	Interface, Surescripts In	
03/19/21 1506	Sign	Lai, Eugene C., MD	Reorder from Order: 418718833

Eliquis 2.5 mg tablet [419846809]

Dose, Route, Frequency: As Directed
Dispense Quantity: 180 tablet Refills: 0

Sig: TAKE 1 TABLET BY MOUTH TWICE DAILY

Start Date: 03/19/21 End Date: --
Written Date: -- Expiration Date: --
Ordering Date: 03/19/21
Original Order: apixaban (ELIQUIS) 2.5 mg tablet [418718833]

Providers

Ordering Provider and Authorizing Provider:
Lai, Eugene C.
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology
All Parent Orders (continued)

Medications - All Orders

Eliquis 2.5 mg tablet [419846809]

Electronically signed by: **Lai, Eugene C., MD on 03/19/21 1506** Status: **Pending**
Ordering user: Lai, Eugene C., MD 03/19/21 1506 Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Frequency: 03/19/21 - Until Discontinued Class: Normal
Pended by: Interface, Surescripts In 03/19/21 1459
Reordered from: apixaban (ELIQUIS) 2.5 mg tablet [418718833]

clonAZEPAM (KlonoPIN) 0.5 MG tablet [Pharmacy Med Name: clonazepam 0.5 mg tablet] [419846810]

Electronically signed by: **Lai, Eugene C., MD on 03/19/21 1506** Status: **Pending**
Ordering user: Lai, Eugene C., MD 03/19/21 1506 Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Frequency: 03/19/21 - Until Discontinued Class: Normal
Pended by: Interface, Surescripts In 03/19/21 1459
Medication comments: This prescription was filled on 3/19/2021. Any refills authorized will be placed on file.

03/19/2021 - Refill in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #
3/19/2021 2:59 PM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100096591186

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider	Authorizing Provider	Referring Provider
Lai, Eugene C., MD	Lai, Eugene C., MD	Pool, James L., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of Neurology	6560 Fannin Street Suite 802 Houston TX 77030-2725	713-441-3780	713-790-5079

Follow-up and Dispositions

- Return in about 4 months (around 6/2/2021) for Next scheduled follow up.

Level of Service

Level of Service
PR OFFICE/OUTPATIENT ESTABLISHED MOD MDM 30-39 MIN

Research Study Linked to Office Visit on 2/2/2021

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/2/2021

Problems last reviewed by Lai, Eugene C., MD on 2/2/2021 1008

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Idiopathic peripheral neuropathy *[last edited by Lai, Eugene C., MD on 2/21/2020 2038]*

Diagnosis: Idiopathic peripheral neuropathy | Noted on: 02/21/2020 | Chronic: No

[redacted] *[last edited by Lai, Eugene C., MD on 2/21/2020 2037]*

Diagnosis: [redacted] | Noted on: 02/21/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 2/2/2021

Allergies last reviewed by Lai, Eugene C., MD on 2/2/2021 1008
No Known Allergies

History as of 2/2/2021

Medical History as of 2/2/2021

Medical last reviewed by Lai, Eugene C., MD on 2/2/2021
None

Surgical History as of 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Surgical last reviewed by Lai, Eugene C., MD on 2/2/2021
None

Family History as of 2/2/2021

Family History as of 2/2/2021

Substance & Sexuality History as of 2/2/2021

Tobacco Use as of 2/2/2021

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/2/2021

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
—	—	Never Used	—	Provider

Alcohol Use as of 2/2/2021

Alcohol Use last reviewed by Pena, Flor, MA on 2/2/2021

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 2/2/2021

Drug Use last reviewed by Pena, Flor, MA on 2/2/2021

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 2/2/2021

Sexual Activity last reviewed by Pena, Flor, MA on 2/2/2021

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 2/2/2021

Socioeconomic as of 2/2/2021

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Medication List

Medication List

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/2/2021 1008

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 3/13/2019
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021
Informant: Family Member

Exelon 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.
Authorized by: Lai, Eugene C., MD
Ordered on: 6/12/2020
Start date: 6/12/2020
End date: 3/15/2021
Quantity: 90 patch
Refill: 1 refill by 6/12/2021

Eliquis 2.5 mg tablet

Instructions: TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.
Authorized by: Lai, Eugene C., MD
Ordered on: 11/11/2020
Start date: 11/11/2020
End date: 2/9/2021
Quantity: 180 tablet
Refill: No refills remaining

carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Authorized by: Lai, Eugene C., MD
Ordered on: 11/11/2020
Start date: 11/11/2020
End date: 3/15/2021
Quantity: 540 tablet
Refill: 3 refills by 11/11/2021

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Medication List (continued)

Instructions: TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME
Authorized by: Lai, Eugene C., MD
Ordered on: 12/22/2020
Start date: 12/22/2020
End date: 2/20/2021
Quantity: 30 tablet
Refill: 1 refill by 6/20/2021

rosuvastatin (CRESTOR) 5 mg tablet *[reconciled by Pena, Flor, MA on 2/2/2021 0921]*

Instructions: Take 5 mg by mouth daily.
Entered by: Pena, Flor, MA
Entered on: 2/2/2021
Start date: 11/10/2020
Informant: Family Member

Myrbetriq 50 mg tablet extended release 24 hr *[reconciled by Pena, Flor, MA on 2/2/2021 0921]*

Instructions: Take 50 mg by mouth daily.
Entered by: Pena, Flor, MA
Entered on: 2/2/2021
Start date: 12/14/2020
End date: 6/1/2021
Informant: Family Member

Stopped in Visit

None

Progress Notes

Progress Notes

Lai, Eugene C., MD at 2/2/2021 0930

Author: Lai, Eugene C., MD
Service: —
Author Type: Physician
Filed: 2/3/2021 7:59 AM
Encounter Date: 2/2/2021
Creation Time: 2/2/2021 9:28 AM
Status: Signed
Editor: Lai, Eugene C., MD (Physician)

NEUROLOGY FOLLOW-UP CLINIC VISIT

Patient is a 79-year-old ambidextrous man with a history of Parkinson's disease, mild cognitive impairment, REM sleep behavior disorder, ocular migraine, hyperlipidemia, hypothyroidism, atrial fibrillation, [redacted] glaucoma, melanoma, [redacted]

He comes with his wife, Dorothy, for follow-up of his Parkinson's disease. Last visit was on 2/12/2020. He reports physically stable. He has retired as CEO of his software company but is still under a lot of stress. Sleep is better with trazodone and clonazepam. Appetite is good. Basic activities of daily living are independent, but slower. Gait and balance are mildly unsteady but he does not use a cane. He has no recent fall. [redacted] His wife needs to help him in organizing his responsibilities and taking care of legal issues. Memory is impaired but stable. He uses Exelon patch 9.5/24h daily. He does not exercise regularly due to low back pain and also not able to go to the Houstonian for exercise. He tries to walk a little with his housekeeper every other day. He takes carbidopa/levodopa 25/100 2 tablets only 2 times a day at 8 am and 8 pm, and he typically forgets his 2 pm dose.

There is no new neurological complaint. He has slowness, stiffness, and gait imbalance. He lacks energy and is inactive. He denies recent headache, dizziness, weakness, confusion, dysarthria, dysphagia.

MEDICATIONS:	Sig
• Myrbetriq 50 mg tablet extended release 24 hr	Take 50 mg by mouth daily.
• rosuvastatin (CRESTOR) 5 mg tablet	5 mg daily.
• clonAZEPAM (KlonoPIN) 0.5	TAKE ONE TABLET BY MOUTH EVERY EVENING

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

MG tablet	AT BEDTIME
• carbidopa-levodopa (SINEMET) 25-100 mg per tablet	TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
• Eliquis 2.5 mg tablet	TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.
• Exelon 9.5 mg/24 hr	Place 1 patch on the skin daily.
• buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet	Take two tablets every morning and one every evening [redacted]
• levomefolate calcium (L-METHYLFOLATE ORAL)	Take one tablet by mouth daily to lower homocysteine
• levothyroxine (SYNTHROID) 75 mcg tablet	Take one tablet every morning for hypothyroidism
• omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule	Take by mouth.
• testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump	Place on the skin.
• traZODone (DESYREL) 50 MG tablet	Take 50 mg by mouth.

REVIEW OF SYSTEMS:
Constitutional: Positive for easy fatigue, lack of energy. Weight loss of about 3.5 lbs. since last visit.
Eyes: Positive for visual disturbance due to glaucoma.
ENT: Positive for hearing loss. No nose bleed, sore throat.
Respiratory: Negative for cough and shortness of breath.
Cardiovascular: Negative for chest pain, palpitation, leg swelling.
Gastrointestinal: Positive for mild constipation. No diarrhea, abdominal pain.
Genitourinary: Positive for nocturia, frequency, urgency. No dysuria.
Musculoskeletal: Positive for low back pain. Negative for other joint pain, joint swelling, muscle pain.
Skin: Negative for rash, lesion.
Hematological: Negative for bruising, bleeding, adenopathy.
Allergy/Immunology: Negative for allergy symptoms.
Psychiatric/Behavioral: [redacted] No agitation.
Neurological: See above.

FAMILY/SOCIAL HISTORY: Lives with wife. No cigarettes and rare alcohol. They are in the process of moving to the River Oaks area closer to their son.

EXAMINATION:
Vitals:

	02/02/21 0919	02/02/21 0922
BP:	122/74	133/74
BP Location:	Left arm	Left arm
Patient Position:	Sitting	Standing
Pulse:	84	76
Temp:	96.9 °F	
Weight:	86 kg (189 lb 9.6 oz)	
Height:	5' 11.5"	

General: Well developed and well nourished elderly man in no acute distress. He is subdued but pleasant and cooperative.

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

Physical: Head and face are normal. No pain or tenderness to palpation. No edema or rash. Mild hypomimia and hypophonia.
Neurological: 'On' state
MS: He is alert and attentive. O x person, place, and time. He follows complex verbal commands. Memory is 4/4 immediate -> 0/4 delayed. Comprehension and expression are slower. Insight and judgment are mildly impaired.
MoCA score (1/8/2020) = 20/30.
CN: II-XII symmetrical and adequate except bilateral hearing loss. EOM full and tongue is midline.
Motor: Strength is 5/5 and symmetrical except bilateral hip flexors, 5-/5. No tremor and mild rigidity in limbs.
Sensory: Decreased to vibration in both feet.
Coordination: F->N->F without dysmetria. Rapid alternating movements are slower bilaterally.
Gait: He arises from sitting without assistance. He walks with a slightly wide-based gait. Decreased arm swings and hesitant in turning without assistance. He can perform heel, toe walking but not tandem walking.

	VISIT DIAGNOSES:	ICD-10-CM
1.	**Parkinson's disease (HCC)**	**G20**
2.	Mild cognitive impairment	G31.84
3.	[redacted]	
4.	Idiopathic peripheral neuropathy	G60.9

IMPRESSION:
Significant for: Clinical findings are consistent with Parkinson's disease with mild cognitive impairment.
He is under a lot of stress trying to still run his company by himself, and his wife is also stressed out.
He has signs of mild cognitive impairment and peripheral neuropathy with gait imbalance.
Neurological and cognitive examinations are without notable change from last visit.
Physical examination is stable.

PLANS:
Patient's neurologic condition and management are discussed with him and his wife at length again.
He needs to take carbidopa/levodopa 25/100 2 tablets 3 times a day at 8:30 am, 1:30 pm and 6:30 pm and on time. Take about at least 30 minutes before or after meals.
Put Exelon patch 9.5 mg/24h topically every day on shoulders and back and rotate over 14 areas, for cognitive stabilization. Get instructions from the Internet for "Exelon patch placement'.
Continue trazodone 50 mg and clonazepam 0.5 mg at bedtime for sleep and RBD.
Continue bupropion 100 mg 2 tablets in the morning and 1 tablet at bedtime for mood stabilization.
Continue other present medications.
I will order physical and occupational therapy at home after he moves into his new house.
He should not drive his car for now.
Keep physically and mentally active. Exercise regularly.
Follow up with Dr. James Pool, PCP.
Return to clinic in 4 months.

Total time spent today in evaluation and treatment of patient, including review of previous medical records and counseling = 32 minutes.

PATIENT EDUCATION:
[x] Patient [x] Significant other(s)
Topic:
Disease specific issues [x]
Medications [x]
Medication Side effects [x]
Tests [x]

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

Treatment/follow-up plans [x]
Consults [x]
Surgical plan [ ]
Teaching Method: Discussion [x] Handouts [ ]
Patient/family Response: Verbalize understanding and agree(s) with treatment plans [x]

Today I spent >50% of visit time on counseling and patient education.

Eugene C. Lai, M.D., Ph.D.
Robert W. Hervey Distinguished Endowed Chair in Parkinson's Disease
Professor of Neurology and Neuroscience
Director, Neurodegenerative Disease Clinic

Stanley H. Appel Department of Neurology
Houston Methodist Neurological Institute &
Weill Cornell Medical School
6560 Fannin, Suite 802
Houston, Texas 77030
TEL. 713-441-0239
FAX. 713-790-5044

Electronically signed by Lai, Eugene C., MD at 2/3/2021 7:59 AM

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Medications - All Orders

rosuvastatin (CRESTOR) 5 mg tablet [335306867] Patient-reported historical medication

Ordering date: 02/02/21 0921
Ordering mode: Standard
Frequency: Routine Daily 11/10/20 - Until Discontinued
Authorized by: Provider, Historical, MD
Class: Historical Med

Myrbetriq 50 mg tablet extended release 24 hr [335306868] Patient-reported historical medication

Ordering date: 02/02/21 0921
Ordering mode: Standard
Frequency: Routine Daily 12/14/20 - 06/01/21
Discontinued by: Francia, Loi S 06/01/21 1237
Authorized by: Provider, Historical, MD
Class: Historical Med

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals (continued)

Most recent update: 2/2/2021 9:24 AM by Pena, Flor, MA

Vital Signs - Last Recorded

BP	Pulse	Temp	Ht	Wt
133/74 (BP Location: Left arm, Patient Position: Standing)	76	96.9 °F	5' 11.5"	86 kg (189 lb 9.6 oz)

BMI
26.08 kg/m²

Flowsheets

Custom Formula Data

Row Name	02/02/21 0922	02/02/21 0919
Adult IBW/VT Calculations		
IBW/kg (Calculated)	—	76.45 -FP at 02/02/21 0919
Low Range Vt 6mL/kg	—	458.7 mL/kg -FP at 02/02/21 0919
Adult Moderate Range Vt 8mL/kg	—	611.6 mL/kg -FP at 02/02/21 0919
Adult High Range Vt 10mL/kg	—	764.5 mL/kg -FP at 02/02/21 0919
IBW/kg (Calculated) (lbs)	—	168.54 -FP at 02/02/21 0919
OTHER		
BMI (Calculated)	—	26.08 -FP at 02/02/21 0919
IBW/kg (Calculated) Male	—	76.45 kg -FP at 02/02/21 0919
IBW/kg (Calculated) Female	—	71.95 kg -FP at 02/02/21 0919
BMI	—	26.08 -FP at 02/02/21 0919
Total Weight Change	—	189.6 -FP at 02/02/21 0919
Total Weight Change	—	+189.6 -FP at 02/02/21 0919
Weight Change Since Last Visit	—	-3.4 -FP at 02/02/21 0919
Weight Change Since Last Visit	—	-3.4 -FP at 02/02/21 0919
Internal Initial Weight - Reference Only	—	0 -FP at 02/02/21 0919
Fluid Needs	—	62172 -FP at 02/02/21 0919
BSA (Calculated - sq m)	—	2.08 sq meters -FP at 02/02/21 0919
ED VITALS FORMULA	2 -FP at 02/02/21 0924	3 -FP at 02/02/21 0922
MAP (Calculated)	93.67 -FP at 02/02/21 0924	90 -FP at 02/02/21 0922
Body Composition Analysis		
BMI	—	26.08

HOUSTON Methodist LEADING MEDICINE
HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

-FP at 02/02/21 0919

Dietitian Vitals

BMI (Calculated)	—	26.08 -FP at 02/02/21 0919
IBW/kg (Calculated)	—	76.45 -FP at 02/02/21 0919
IBW/kg (Calculated) Female	—	71.95 kg -FP at 02/02/21 0919
IBW/kg (Calculated) Males	—	76.45 -FP at 02/02/21 0919

Fluid Needs

Total Fluid Estimated Needs	—	62172 -FP at 02/02/21 0919

Relevant Labs and Vitals

Temp (in Celsius)	—	36.1 -FP at 02/02/21 0922

Data

Row Name	02/02/21 0922	02/02/21 0919
OTHER		
Change in SBP	11 -FP at 02/02/21 0924	122 -FP at 02/02/21 0922

Encounter Vitals

Row Name	02/02/21 0922	02/02/21 0919
Enc Vitals		
BP	133/74 -FP at 02/02/21 0924	122/74 -FP at 02/02/21 0922
Pulse	76 -FP at 02/02/21 0924	84 -FP at 02/02/21 0922
Temp	—	96.9 °F -FP at 02/02/21 0922
Weight	—	86 kg (189 lb 9.6 oz) -FP at 02/02/21 0919
Height	—	5' 11.5" -FP at 02/02/21 0919
Vital Signs		
BP Location	Left arm -FP at 02/02/21 0924	Left arm -FP at 02/02/21 0922
Patient Position	Standing -FP at 02/02/21 0924	Sitting -FP at 02/02/21 0922

Social Determinants

Row Name	02/02/21 09:19:45
Alcohol Use	
How often do you have a drink containing alcohol?	Never Data migrated from History -FP at 05/18/21 1428

Vital Signs

Row Name	02/02/21 1019

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

OTHER	
Stimulants	000 -DH at 02/02/21 0919
Sedatives	220 -DH at 02/02/21 0919
Narcotics	100 -DH at 02/02/21 0919

User Key (r) = Recorded By, (t) = Taken By, (c) = Cosigned By

Initials	Name	Effective Dates	Provider Type	Discipline
FP	Pena, Flor, MA	11/21/20 - 03/15/21	Medical Assistant	—
DH	Hm Interface, Documentation Incoming	—	—	—

Patient Instructions

Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals.
Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'.
Will order physical therapy after you moved to your new house.
No driving for now.
Continue other present medications.
Keep physically and mentally active. Exercise regularly.

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Patient Instuctions

Patient Instructions History

Patient Instructions Revisions	Status	Date&Time	By User
Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals. Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'. Will order physical therapy after you moved to your new house. No driving for now. Continue other present medications. Keep physically and mentally active. Exercise regularly.	Addendum	02/02/2021 10:06 AM	LAI, EUGENE
Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals. Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'. Will order physical therapy after you moved to your new house. Continue other present medications. Keep physically and mentally active. Exercise regularly.	Signed	02/02/2021 10:05 AM	LAI, EUGENE

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary

AFTER VISIT SUMMARY

Robert T. Brockman MRN: 003768603

2/2/2021 9:30 AM HMNI Stanley H Appel Dept of Neurology 713-441-3780

Instructions from Eugene C. Lai, MD

Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals.
Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'.
Will order physical therapy after you moved to your new house.
No driving for now.
Continue other present medications.
Keep physically and mentally active. Exercise regularly.

Return in about 4 months
(around 6/2/2021) for Next scheduled follow up.

What's Next

You currently have no upcoming appointments scheduled.

Allergies

No Known Allergies

Preventive Care

Topic	Due
COVID-19 VACCINE (1 of 2)	05/28/1957
SHINGLES VACCINES (1)	05/28/1991

Current Health Issues

Dementia associated with Parkinson's disease
Nerve disorder
Mixed anxiety depressive disorder
Parkinson disease

Today's Visit

You saw Eugene C. Lai, MD on Tuesday February 2, 2021. The following issues were addressed: Parkinson disease, Mild cognitive impairment, Mixed anxiety depressive disorder, and Nerve disorder.

Blood Pressure 133/74	BMI 26.08
Weight 189 lb 9.6 oz	Height 5' 11.5"
Temperature 96.9 °F	Pulse 76

Robert T. Brockman (MRN: 003768603) • Printed by Eugene C. Lai, MD at 2/2/21 10:09 AM

Page 1 of 3 Epic

Patient Care Team

	Relationship	Specialty	Notifications	Start	End
Pool, James L., MD	**PCP - General**	Endocrinology		12/26/19	
Phone: 713-798-0180	Fax: 713-798-0174				

MyChart Signup

Our records indicate that you have an active Houston Methodist MyChart account.

You can view your "After Visit Summary" by going to HoustonMethodist.org/mychart and logging in with your Houston Methodist MyChart username and password. If you are under 18 and would like to view your "After Visit Summary," please have your parent or guardian login with his or her own Houston Methodist MyChart username and password and access your records.

If you have questions, please call 832.667.5694 to speak with our Houston Methodist Customer Service Team. Remember, do not use Houston Methodist MyChart if you have an urgent need or request. For medical emergencies, dial **911**.

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Your Medication List as of February 2, 2021 10:09 AM

ⓘ Always use your most recent med list.

AndroGeL 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump Generic drug: testosterone	Place on the skin.
buPROPion SR 100 MG 12 hr tablet Commonly known as: WELLBUTRIN SR	Take two tablets every morning and one every evening to control depression
carbidopa-levodopa 25-100 mg per tablet Commonly known as: SINEMET	TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
clonAZEPAM 0.5 MG tablet Commonly known as: KlonoPIN	TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME
Eliquis 2.5 mg tablet Generic drug: apixaban	TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.
Exelon 9.5 mg/24 hr Generic drug: rivastigmine	Place 1 patch on the skin daily.
Fish Oil 100-160-1,000 mg capsule Generic drug: omega 3-dha-epa-fish oil	Take by mouth.
L-METHYLFOLATE ORAL	Take one tablet by mouth daily to lower homocysteine
Myrbetriq 50 mg tablet extended release 24 hr Generic drug: mirabegron	Take 50 mg by mouth daily.
rosuvastatin 5 mg tablet Commonly known as: CRESTOR	5 mg daily.
Synthroid 75 mcg tablet Generic drug: levothyroxine	Take one tablet every morning for hypothyroidism
traZODone 50 MG tablet Commonly known as: DESYREL	Take 50 mg by mouth.

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary (continued)

Visit Information

Date & Time	Provider	Department	Encounter #
2/2/2021 9:30 AM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100089907549

Coding Summary for this Encounter

Code	Description	Service Date	Service Provider	Qty
99214	PR OFFICE/OUTPATIENT ESTABLISHED MOD MDM 30-39 MIN Dx: Parkinson's disease [G20], Mild cognitive impairment, so stated [G31.84], Other specified anxiety disorders [F41.8], Hereditary and idiopathic neuropathy, unspecified [G60.9]	2/2/2021	Lai, Eugene C., MD	1

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 12/22/2020

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology

Visit Information

Contacts

	Type	Contact	Phone	User
12/22/2020 02:00 PM CST	Interface (Incoming)	Briargrove Pharmacy - Houston, TX - 6435 San Felipe	713-783-5704	Interface, Surescripts In

Nursing Assessment

No Nursing Assessment available for this encounter.

Questionnaires

No completed forms available for this encounter.

Research Study Linked to Refill on 12/22/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 12/22/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Idiopathic peripheral neuropathy *[last edited by Lai, Eugene C., MD on 2/21/2020 2038]*

Diagnosis: Idiopathic peripheral neuropathy | Noted on: 02/21/2020 | Chronic: No

[redacted] *last edited by Lai, Eugene C., MD on 2/21/2020 2037]*

Diagnosis: [redacted] | Noted on: 02/21/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 12/22/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907
No Known Allergies

History as of 12/22/2020

Medical History as of 12/22/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Surgical History as of 12/22/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Family History as of 12/22/2020

Family History as of 12/22/2020

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Substance & Sexuality History as of 12/22/2020

Tobacco Use as of 12/22/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
—	—	Never Used	—	Provider

Alcohol Use as of 12/22/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 12/22/2020

Drug Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 12/22/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 2/12/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 12/22/2020

Occupational as of 12/22/2020

Occupational last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Socioeconomic as of 12/22/2020

Socioeconomic last reviewed by Riley, Lillian R, MA on 2/12/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Social Documentation History as of 12/22/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 3/13/2019
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021
Informant: Family Member

Exelon 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.
Authorized by: Lai, Eugene C., MD
Ordered on: 6/12/2020
Start date: 6/12/2020
End date: 3/15/2021
Quantity: 90 patch
Refill: 1 refill by 6/12/2021

Eliquis 2.5 mg tablet

Instructions: TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.
Authorized by: Lai, Eugene C., MD
Ordered on: 11/11/2020
Start date: 11/11/2020
End date: 2/9/2021
Quantity: 180 tablet
Refill: No refills remaining

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Authorized by: Lai, Eugene C., MD
Start date: 11/11/2020
Quantity: 540 tablet
Ordered on: 11/11/2020
End date: 3/15/2021
Refill: 3 refills by 11/11/2021

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME
Authorized by: Lai, Eugene C., MD
Start date: 12/22/2020
Quantity: 30 tablet
Ordered on: 12/22/2020
End date: 2/20/2021
Refill: 1 refill by 6/20/2021

Stopped in Visit

None

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

clonAZEPAM (KlonoPIN) 0.5 MG tablet [335306866] (Expired)

Electronically signed by: **Lai, Eugene C., MD on 12/22/20 1608**
Status: **Expired**
Mode: Ordering in Verbal with readback mode
Communicated by: Atassi, Farah
Ordering user: Atassi, Farah 12/22/20 1430
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Frequency: 12/22/20 - 60 days
Class: Print
Released by: Atassi, Farah 12/22/20 1430
Medication comments: This prescription was filled on 12/22/2020. Any refills authorized will be placed on file.

Order Details

Order Details

Priority	Expected	Study Status
	12/22/2020 2:30 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	60 days	None	Print

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
12/22/20 1400	Pend	Interface, Surescripts In	
12/22/20 1430	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
12/22/20 1608	Verbal Cosign	Lai, Eugene C., MD	
02/02/21 0921	Taking Flag Checked	Pena, Flor, MA	

clonAZEPAM (KlonoPIN) 0.5 MG tablet [335306866] ENDED

Dose, Route, Frequency: As Directed
Dispense Quantity: 30 tablet Refills: 1
Note to Pharmacy: This prescription was filled on 12/22/2020. Any refills authorized will be placed on file.

Sig: TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME

Start Date: 12/22/20 End Date: 02/20/21

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Written Date: 12/22/20 Expiration Date: 06/20/21

Providers

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Atassi, Farah

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Medications - All Orders

clonAZEPAM (KlonoPIN) 0.5 MG tablet [335306866]

Electronically signed by: **Lai, Eugene C., MD on 12/22/20 1608** Status: **Expired**
Mode: Ordering in Verbal with readback mode
Ordering user: Atassi, Farah 12/22/20 1430
Authorized by: Lai, Eugene C., MD
Frequency: 12/22/20 - 60 days
Released by: Atassi, Farah 12/22/20 1430
Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Class: Print
Medication comments: This prescription was filled on 12/22/2020. Any refills authorized will be placed on file.

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #
12/22/2020 2:00 PM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100090665609

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans

Prescription Record

Scan on 12/31/2020 9:49 AM: Clonazepam Refill 12/22/20

Scan (below)

Fax Call Report **HP LaserJet MFP M528** **Page 1**

Fax Header Information

Dr. Lai office
7137905044
Dec/22/2020 3:34:52 PM

Job	Date/Time	Type	Line	Identification	Duration	Pages	Result
2557	Dec/22/2020 3:34:03 PM	Send	Analog	97137835482	00:45	1	Success

Dec/22/2020 3:34:27 PM Dr. Lai office 7137905044 1/1

Houston Methodist
HMNI Stanley H Appel Dept of Neurology

Lai, Eugene C., MD
6560 FANNIN ST
SUITE 802
HOUSTON TX 77030
Phone: 713-441-0239

Date:
Dec 22, 2020

Patient Name: Robert T Brockman MRN: 003768603
Address: 333 W FRIAR TUCK LN DOB: 05/28/1941
HOUSTON TX 77024
Phone number: 713-680-9835

Rx: clonAZEPAM (KlonoPIN) 0.5 MG tablet
Sig: TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME
Route: Refills: **1 (One)**
Qty: **30 (Thirty) tablet**

RXORDDATA(ORDCtrldMedTxStatu
s)
RXO(ORDCtrldMedTxStatus)
Start On: Dec 22, 2020 Order ID: 335305866
EndingOn: Feb 20, 2021 Reference #1568346
Comments: This prescription was filled on 12/22/2020. Any refills authorized will be placed on file.

Signature:
NPI: 1790871002 DEA: BL1509441
DPS: V0089825

Pharmacy: BRIARGROVE PHARMACY - HOUSTON, TX - 5435 SAN FELIPE
Phone: 713-783-5704
Fax: 713-783-5462

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Dec/22/2020 3:34:52 PM English (United States)

12/22/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

Houston Methodist
HMNI Stanley H Appel Dept of Neurology

Lai, Eugene C., MD
6560 FANNIN ST
SUITE 802
HOUSTON TX 77030
Phone: 713-441-0239

Date:
Dec 22, 2020

Patient Name: Robert T Brockman
Address: [redacted]
HOUSTON TX 77024
Phone number: 713-680-9635

MRN: 003768603
DOB: [redacted]941

Rx: clonAZEPAM (KlonoPIN) 0.5 MG tablet
Sig: TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME
Route:
Refill: **1 (One)**
Qty: **30 (Thirty) tablet**

RXORDDATA(ORDCtrldMedTxStatus)
RXO(ORDCtrldMedTxStatus)
Start On: Dec 22, 2020
EndingOn: Feb 20, 2021
Order ID: 335306866
Reference #1568346
Comments: This prescription was filled on 12/22/2020. Any refills authorized will be placed on file.

Signature:
NPI: 1790871002
DPS: V0069825
DEA: BL1509441

Pharmacy: BRIARGROVE PHARMACY - HOUSTON, TX - 6435 SAN FELIPE
Phone: 713-783-5704
Fax: 713-783-5482

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HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 11/10/2020

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology

Visit Information

Contacts

	Type	Contact	Phone	User
11/10/2020 11:04 AM CST	Interface (Incoming)	Briargrove Pharmacy - Houston, TX - 6435 San Felipe	713-783-5704	Interface, Surescripts In

Nursing Assessment

No Nursing Assessment available for this encounter.

Questionnaires

No completed forms available for this encounter.

Research Study Linked to Refill on 11/10/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 11/10/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Idiopathic peripheral neuropathy *[last edited by Lai, Eugene C., MD on 2/21/2020 2038]*

Diagnosis: Idiopathic peripheral neuropathy | Noted on: 02/21/2020 | Chronic: No

[redacted] *last edited by Lai, Eugene C., MD on 2/21/2020 2037]*

Diagnosis [redacted] | Noted on: 02/21/2020 | Chronic: No

[redacted]

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 11/10/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907
No Known Allergies

History as of 11/10/2020

Medical History as of 11/10/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Surgical History as of 11/10/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Family History as of 11/10/2020

Family History as of 11/10/2020

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Substance & Sexuality History as of 11/10/2020

Tobacco Use as of 11/10/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
—	—	Never Used	—	Provider

Alcohol Use as of 11/10/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 11/10/2020

Drug Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 11/10/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 2/12/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 11/10/2020

Occupational as of 11/10/2020

Occupational last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Socioeconomic as of 11/10/2020

Socioeconomic last reviewed by Riley, Lillian R, MA on 2/12/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Social Documentation History as of 11/10/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

None

Medication List

Medication List

This visit is during an admission. Changes to the med list made in this visit will be reflected in the After Visit Summary of the admission.

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306865] (Discontinued)

Electronically signed by: **Lai, Eugene C., MD on 11/11/20 0718** Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 11/11/20 0718
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Standard
Frequency: 11/11/20 - 03/15/21
Class: Normal
Released by: Lai, Eugene C., MD 11/11/20 0718
Discontinued by: Guandique, Zulma 03/15/21 1021 [Med List Cleanup]
Medication comments: This prescription was filled on 11/10/2020. Any refills authorized will be placed on file.
Reordered from: carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Order Details

Order Details

Priority	Expected	Study Status
	11/11/2020 7:18 AM	

Order Details

Frequency	Duration	Priority	Order Class
None	None	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
11/10/20 1105	Pend	Interface, Surescripts In	
11/11/20 0718	Taking Flag Checked	Lai, Eugene C., MD	
11/11/20 0718	Sign	Lai, Eugene C., MD	Reorder from Order: 335306860
02/02/21 0921	Taking Flag Checked	Pena, Flor, MA	
03/15/21 0927	Order for Admission	Patel, Amitkumar Natvarlal, MD	To Order: 418718815
03/15/21 1021	Discontinue	Guandique, Zulma	Reason:Med List Cleanup

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306865]
DISCONTINUED

Dose, Route, Frequency: As Directed
Dispense Quantity: 540 tablet Refills: 3
Note to Pharmacy: This prescription was filled on 11/10/2020. Any refills authorized will be placed on file.

Sig: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Start Date: 11/11/20 End Date: 03/15/21
Discontinued by: Guandique, Zulma on 3/15/2021 10:21
Reason: Med List Cleanup

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Written Date: 11/11/20 Expiration Date: 11/11/21
Original Order: carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306860]

Providers

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Eliquis 2.5 mg tablet [335306864] (Expired)

Electronically signed by: **Lai, Eugene C., MD on 11/11/20 0718** Status: **Expired**
Ordering user: Lai, Eugene C., MD 11/11/20 0718 Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD Ordering mode: Standard
Frequency: 11/11/20 - 90 days Class: Normal
Released by: Lai, Eugene C., MD 11/11/20 0718
Reordered from: Eliquis 2.5 mg tablet

Order Details

Order Details

Priority	Expected	Study Status
	11/11/2020 7:18 AM	

Order Details

Frequency	Duration	Priority	Order Class
None	90 days	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
11/10/20 1105	Pend	Interface, Surescripts In	
11/11/20 0718	Sign	Lai, Eugene C., MD	Reorder from Order: 335306862
11/11/20 0718	Taking Flag Checked	Lai, Eugene C., MD	
02/02/21 0921	Taking Flag Checked	Pena, Flor, MA	

Eliquis 2.5 mg tablet [335306864] ENDED

Dose, Route, Frequency: As Directed
Dispense Quantity: 180 tablet Refills: 0

Sig: TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.

Start Date: 11/11/20 End Date: 02/09/21
Written Date: 11/11/20 Expiration Date: 11/11/21
Original Order: Eliquis 2.5 mg tablet [335306862]

Providers

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Medications - All Orders

Eliquis 2.5 mg tablet [335306864]

Electronically signed by: **Lai, Eugene C., MD on 11/11/20 0718** Status: **Expired**
Ordering user: Lai, Eugene C., MD 11/11/20 0718
Authorized by: Lai, Eugene C., MD
Frequency: 11/11/20 - 90 days
Released by: Lai, Eugene C., MD 11/11/20 0718
Reordered from: Eliquis 2.5 mg tablet [335306862]
Ordering provider: Lai, Eugene C., MD
Ordering mode: Standard
Class: Normal

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306865]

Electronically signed by: **Lai, Eugene C., MD on 11/11/20 0718** Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 11/11/20 0718
Authorized by: Lai, Eugene C., MD
Frequency: 11/11/20 - 03/15/21
Released by: Lai, Eugene C., MD 11/11/20 0718
Ordering provider: Lai, Eugene C., MD
Ordering mode: Standard
Class: Normal
Discontinued by: Guandique, Zulma 03/15/21 1021 [Med List Cleanup]
Medication comments: This prescription was filled on 11/10/2020. Any refills authorized will be placed on file.
Reordered from: carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306860]

11/10/2020 - Refill in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #
11/10/2020 11:04 AM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100088240549

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 7/14/2020

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology

Visit Information

Contacts

	Type	Contact	Phone	User
07/14/2020 12:10 PM CDT	Interface (Incoming)	Briargrove Pharmacy - Houston, TX - 6435 San Felipe	713-783-5704	Interface, Surescripts In

Nursing Assessment

No Nursing Assessment available for this encounter.

Questionnaires

No completed forms available for this encounter.

Research Study Linked to Refill on 7/14/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 7/14/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Idiopathic peripheral neuropathy *[last edited by Lai, Eugene C., MD on 2/21/2020 2038]*

Diagnosis: Idiopathic peripheral neuropathy | Noted on: 02/21/2020 | Chronic: No

[redacted] *[last edited by Lai, Eugene C., MD on 2/21/2020 2037]*

Diagnosis: [redacted] | Noted on: 02/21/2020 | Chronic: No

[redacted]

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 7/14/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907
No Known Allergies

History as of 7/14/2020

Medical History as of 7/14/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Surgical History as of 7/14/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Family History as of 7/14/2020

Family History as of 7/14/2020

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Substance & Sexuality History as of 7/14/2020

Tobacco Use as of 7/14/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
—	—	Never Used	—	Provider

Alcohol Use as of 7/14/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 7/14/2020

Drug Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 7/14/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 2/12/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 7/14/2020

Occupational as of 7/14/2020

Occupational last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Socioeconomic as of 7/14/2020

Socioeconomic last reviewed by Riley, Lillian R, MA on 2/12/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Social Documentation History as of 7/14/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 3/13/2019
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021
Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Authorized by: Lai, Eugene C., MD
Ordered on: 3/12/2020
Start date: 3/12/2020
End date: 11/11/2020
Quantity: 540 tablet
Refill: 3 refills by 3/12/2021

Exelon 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.
Authorized by: Lai, Eugene C., MD
Ordered on: 6/12/2020
Start date: 6/12/2020
End date: 3/15/2021
Quantity: 90 patch
Refill: 1 refill by 6/12/2021

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Eliquis 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.
Authorized by: Lai, Eugene C., MD
Start date: 7/14/2020
Quantity: 180 tablet
Ordered on: 7/14/2020
End date: 11/11/2020
Refill: No refills remaining

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
Authorized by: Lai, Eugene C., MD
Start date: 7/14/2020
Quantity: 30 tablet
Ordered on: 7/14/2020
End date: 10/12/2020
Refill: 2 refills by 1/10/2021

Stopped in Visit

None

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

clonAZEPAM (KlonoPIN) 0.5 MG tablet [335306863] (Expired)

Electronically signed by: **Lai, Eugene C., MD on 07/14/20 1350**
Status: **Expired**
Mode: Ordering in Verbal with readback mode
Ordering user: Atassi, Farah 07/14/20 1338
Authorized by: Lai, Eugene C., MD
Frequency: Nightly 07/14/20 - 90 days
Released by: Atassi, Farah 07/14/20 1338
Reordered from: clonAZEPAM (KlonoPIN) 0.5 MG tablet
Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Class: Print

Order Details

Order Details

Priority	Expected	Study Status
	7/14/2020 9:00 PM	

Order Details

Frequency	Duration	Priority	Order Class
at bedtime	90 days	None	Print

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
07/14/20 1214	Pend	Interface, Surescripts In	
07/14/20 1338	Sign	Atassi, Farah	Reorder from Order: 320668809; Ordering Mode: Verbal with readback
07/14/20 1338	Taking Flag Checked	Atassi, Farah	
07/14/20 1350	Verbal Cosign	Lai, Eugene C., MD	

clonAZEPAM (KlonoPIN) 0.5 MG tablet [335306863] ENDED

Dose: **0.5 mg**
Route: **oral**
Frequency: **at bedtime**
Dispense Quantity: 30 tablet
Refills: 2

Sig: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Start Date: 07/14/20
End Date: 10/12/20 after 90 doses

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Written Date: 07/14/20 Expiration Date: 01/10/21
Original Order: clonAZEPAM (KlonoPIN) 0.5 MG tablet [320668809]

Providers

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Atassi, Farah

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Eliquis 2.5 mg tablet [335306862] (Discontinued)

Electronically signed by: **Lai, Eugene C., MD on 07/14/20 1350** Status: **Discontinued**
Mode: Ordering in Verbal with readback mode
Ordering user: Atassi, Farah 07/14/20 1338
Authorized by: Lai, Eugene C., MD
Frequency: 07/14/20 - 11/11/20
Released by: Atassi, Farah 07/14/20 1338
Reordered from: apixaban (ELIQUIS) 2.5 mg tablet
Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Class: Normal
Discontinued by: Lai, Eugene C., MD 11/11/20 0718

Order Details

Order Details

Priority	Expected	Study Status
	7/14/2020 1:38 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	None	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
07/14/20 1210	Pend	Interface, Surescripts In	
07/14/20 1338	Sign	Atassi, Farah	Reorder from Order: 320668813; Ordering Mode: Verbal with readback
07/14/20 1338	Taking Flag Checked	Atassi, Farah	
07/14/20 1350	Verbal Cosign	Lai, Eugene C., MD	
11/10/20 1105	Reorder	Lai, Eugene C., MD	To Order: 335306864
11/11/20 0718	Discontinue	Lai, Eugene C., MD	

Eliquis 2.5 mg tablet [335306862] DISCONTINUED

Dose, Route, Frequency: As Directed
Dispense Quantity: 180 tablet Refills: 0

Sig: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Start Date: 07/14/20 End Date: 11/11/20

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Discontinued by: Lai, Eugene C., MD on 11/11/2020 07:18

Written Date: 07/14/20 Expiration Date: 07/14/21
Original Order: apixaban (ELIQUIS) 2.5 mg tablet [320668813]

Providers

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Atassi, Farah

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Medications - All Orders

Eliquis 2.5 mg tablet [335306862]

Electronically signed by: **Lai, Eugene C., MD on 07/14/20 1350** Status: **Discontinued**
Mode: Ordering in Verbal with readback mode
Ordering user: Atassi, Farah 07/14/20 1338
Authorized by: Lai, Eugene C., MD
Frequency: 07/14/20 - 11/11/20
Released by: Atassi, Farah 07/14/20 1338
Reordered from: apixaban (ELIQUIS) 2.5 mg tablet [320668813]
Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Class: Normal
Discontinued by: Lai, Eugene C., MD 11/11/20 0718

clonAZEPAM (KlonoPIN) 0.5 MG tablet [335306863]

Electronically signed by: **Lai, Eugene C., MD on 07/14/20 1350** Status: **Expired**
Mode: Ordering in Verbal with readback mode
Ordering user: Atassi, Farah 07/14/20 1338
Authorized by: Lai, Eugene C., MD
Frequency: Nightly 07/14/20 - 90 days
Released by: Atassi, Farah 07/14/20 1338
Reordered from: clonAZEPAM (KlonoPIN) 0.5 MG tablet [320668809]
Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Class: Print

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #
7/14/2020 12:10 PM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of	2100081613210

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 7/14/2020

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary (continued)

Visit Information (continued)

Neurology

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 7/14/2020

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary (continued)

07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans

Prescription Record

Scan on 7/14/2020 2:51 PM: Clonazepam Refill 07/14/20

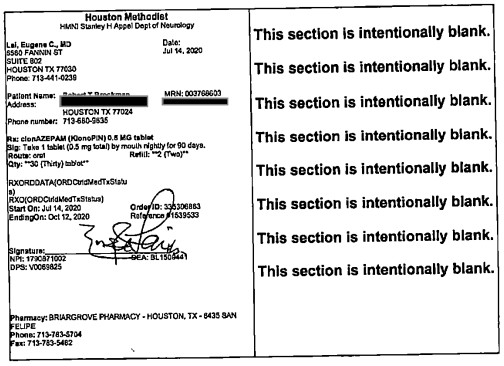
Scan (below)

HP Color LaserJet MFP M476dw

Fax Confirmation

Jul-14-2020 13:08

Job	Date	Time	Type	Identification	Duration	Pages	Result
1289	7/14/2020	13:07:33	Send	97137835482	0:39	1	OK



Houston Methodist
HMNI Stanley H Appel Dept of Neurology

Lai, Eugene C., MD
6560 FANNIN ST
SUITE 809
HOUSTON TX 77030
Phone: 713-441-0238

Date:
Jul 14, 2020

Patient Name: [redacted] MRN: 003768603
Address: [redacted]
HOUSTON TX 77024
Phone number: 713-680-5935

Rx: clonAZEPAM (KlonoPIN) 0.5 MG tablet
Sig: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
Route: oral Refill: **2 (Two)**
Qty: **30 (Thirty) tablet**

RXORDDATA(ORDCtrldMedTxStatu
s)
RXO(QRDCtrldMedTxStatus)
Start On: Jul 14, 2020
EndingOn: Oct 12, 2020
OrderID: 333206883
Reference #1539533

Signature:
NPI: 1790871002
DPS: V0069825
DEA: BL1504441

Pharmacy: BRIARGROVE PHARMACY - HOUSTON, TX - 5435 SAN FELIPE
Phone: 713-783-5704
Fax: 713-783-5462

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07/14/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

Houston Methodist
HMNI Stanley H Appel Dept of Neurology

Lai, Eugene C., MD
6560 FANNIN ST
SUITE 802
HOUSTON TX 77030
Phone: 713-441-0239

Date:
Jul 14, 2020

Patient Name: Robert T Brockman
Address: [redacted]
HOUSTON TX 77024
Phone number: 713-680-9635

MRN: 003768603
[redacted]

Rx: clonAZEPAM (KlonoPIN) 0.5 MG tablet
Sig: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
Route: oral
Refill: **2 (Two)**
Qty: **30 (Thirty) tablet**

RXORDDATA(ORDCtrldMedTxStatus)
RXO(ORDCtrldMedTxStatus)
Start On: Jul 14, 2020
EndingOn: Oct 12, 2020

Order ID: 335306863
Reference #1539533

Signature:
NPI: 1790871002
DEA: BL1509441
DPS: V0069825

Pharmacy: BRIARGROVE PHARMACY - HOUSTON, TX - 6435 SAN FELIPE
Phone: 713-783-5704
Fax: 713-783-5482

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HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 6/12/2020

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology

Visit Information

Contacts

	Type	Contact	Phone	User
06/12/2020 03:58 PM CDT	Interface (Incoming)	Briargrove Pharmacy - Houston, TX - 6435 San Felipe	713-783-5704	Interface, Surescripts In

Nursing Assessment

No Nursing Assessment available for this encounter.

Questionnaires

No completed forms available for this encounter.

Research Study Linked to Refill on 6/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 6/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Idiopathic peripheral neuropathy *[last edited by Lai, Eugene C., MD on 2/21/2020 2038]*

Diagnosis: Idiopathic peripheral neuropathy | Noted on: 02/21/2020 | Chronic: No

[redacted] *st edited by Lai, Eugene C., MD on 2/21/2020 2037]*

Diagnosis: [redacted] | Noted on: 02/21/2020 | Chronic: No

[redacted]

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 6/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907
No Known Allergies

History as of 6/12/2020

Medical History as of 6/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Surgical History as of 6/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Family History as of 6/12/2020

Family History as of 6/12/2020

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Substance & Sexuality History as of 6/12/2020

Tobacco Use as of 6/12/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
—	—	Never Used	—	Provider

Alcohol Use as of 6/12/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 6/12/2020

Drug Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 6/12/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 2/12/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 6/12/2020

Occupational as of 6/12/2020

Occupational last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Socioeconomic as of 6/12/2020

Socioeconomic last reviewed by Riley, Lillian R, MA on 2/12/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Social Documentation History as of 6/12/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 3/13/2019
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021
Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
Authorized by: Lai, Eugene C., MD
Ordered on: 1/8/2020
Start date: 1/8/2020
End date: 7/14/2020
Quantity: 30 tablet
Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.
Authorized by: Lai, Eugene C., MD
Ordered on: 2/12/2020
Start date: 2/12/2020
End date: 7/14/2020
Quantity: 180 tablet
Refill: 3 refills by 2/11/2021

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Authorized by: Lai, Eugene C., MD
Start date: 3/12/2020
Quantity: 540 tablet
Ordered on: 3/12/2020
End date: 11/11/2020
Refill: 3 refills by 3/12/2021

Exelon 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.
Authorized by: Lai, Eugene C., MD
Start date: 6/12/2020
Quantity: 90 patch
Ordered on: 6/12/2020
End date: 3/15/2021
Refill: 1 refill by 6/12/2021

Stopped in Visit

None

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

Exelon 9.5 mg/24 hr [335306861] (Discontinued)

Electronically signed by: **Lai, Eugene C., MD on 06/12/20 1626**
Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 06/12/20 1626
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Standard
Frequency: 06/12/20 - 03/15/21
Class: Normal
Released by: Lai, Eugene C., MD 06/12/20 1626
Discontinued by: Guandique, Zulma 03/15/21 1021 [Med List Cleanup]
Medication comments: This prescription was filled on 6/12/2020. Any refills authorized will be placed on file.
Reordered from: rivastigmine (EXELON) 9.5 mg/24 hr

Order Details

Order Details

Priority	Expected	Study Status
	6/12/2020 4:26 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	None	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
06/12/20 1558	Pend	Interface, Surescripts In	
06/12/20 1626	Sign	Lai, Eugene C., MD	Reorder from Order: 320668814
06/12/20 1626	Taking Flag Checked	Lai, Eugene C., MD	
02/02/21 0921	Taking Flag Checked	Pena, Flor, MA	
03/15/21 0927	Order for Admission	Patel, Amitkumar Natvarlal, MD	To Order: 418718816
03/15/21 1021	Discontinue	Guandique, Zulma	Reason:Med List Cleanup

Exelon 9.5 mg/24 hr [335306861] DISCONTINUED

Dose, Route, Frequency: As Directed
Dispense Quantity: 90 patch Refills: 1
Note to Pharmacy: This prescription was filled on 6/12/2020. Any refills authorized will be placed on file.

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Sig: Place 1 patch on the skin daily.

Start Date: 06/12/20 End Date: 03/15/21
Discontinued by: Guandique, Zulma on 3/15/2021 10:21
Reason: Med List Cleanup

Written Date: 06/12/20 Expiration Date: 06/12/21
Original Order: rivastigmine (EXELON) 9.5 mg/24 hr [320668814]

Providers

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Medications - All Orders

Exelon 9.5 mg/24 hr [335306861]

Electronically signed by: **Lai, Eugene C., MD on 06/12/20 1626** Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 06/12/20 1626
Authorized by: Lai, Eugene C., MD
Frequency: 06/12/20 - 03/15/21
Released by: Lai, Eugene C., MD 06/12/20 1626
Ordering provider: Lai, Eugene C., MD
Ordering mode: Standard
Class: Normal
Discontinued by: Guandique, Zulma 03/15/21 1021 [Med List Cleanup]
Medication comments: This prescription was filled on 6/12/2020. Any refills authorized will be placed on file.
Reordered from: rivastigmine (EXELON) 9.5 mg/24 hr [320668814]

06/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #
6/12/2020 3:58 PM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100079992827

HOUSTON Methodist LEADING MEDICINE
HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 3/12/2020

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology

Visit Information

Contacts

	Type	Contact	Phone	User
03/12/2020 10:06 AM CDT	Interface (Incoming)	Briargrove Pharmacy - Houston, TX - 6435 San Felipe	713-783-5704	Interface, Surescripts In

Nursing Assessment

No Nursing Assessment available for this encounter.

Questionnaires

No completed forms available for this encounter.

Research Study Linked to Refill on 3/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 3/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Idiopathic peripheral neuropathy *[last edited by Lai, Eugene C., MD on 2/21/2020 2038]*

Diagnosis: Idiopathic peripheral neuropathy | Noted on: 02/21/2020 | Chronic: No

[redacted] *[last edited by Lai, Eugene C., MD on 2/21/2020 2037]*

Diagnosis [redacted] | Noted on: 02/21/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 3/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907
No Known Allergies

History as of 3/12/2020

Medical History as of 3/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Surgical History as of 3/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Family History as of 3/12/2020

Family History as of 3/12/2020

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Substance & Sexuality History as of 3/12/2020

Tobacco Use as of 3/12/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
—	—	Never Used	—	Provider

Alcohol Use as of 3/12/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 3/12/2020

Drug Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 3/12/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 2/12/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 3/12/2020

Occupational as of 3/12/2020

Occupational last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Socioeconomic as of 3/12/2020

Socioeconomic last reviewed by Riley, Lillian R, MA on 2/12/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Social Documentation History as of 3/12/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 3/13/2019
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021
Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
Authorized by: Lai, Eugene C., MD
Ordered on: 1/8/2020
Start date: 1/8/2020
End date: 7/14/2020
Quantity: 30 tablet
Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.
Authorized by: Lai, Eugene C., MD
Ordered on: 2/12/2020
Start date: 2/12/2020
End date: 7/14/2020
Quantity: 180 tablet
Refill: 3 refills by 2/11/2021

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

rivastigmine (EXELON) 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.
Authorized by: Lai, Eugene C., MD
Start date: 2/12/2020
Quantity: 90 patch
Ordered on: 2/12/2020
End date: 6/12/2020
Refill: 3 refills by 2/11/2021

carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Authorized by: Lai, Eugene C., MD
Start date: 3/12/2020
Quantity: 540 tablet
Ordered on: 3/12/2020
End date: 11/11/2020
Refill: 3 refills by 3/12/2021

Stopped in Visit

None

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306860] (Discontinued)

Electronically signed by: **Lai, Eugene C., MD on 03/12/20 1244**
Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 03/12/20 1244
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Standard
Frequency: 03/12/20 - 11/11/20
Class: Normal
Released by: Lai, Eugene C., MD 03/12/20 1244
Discontinued by: Lai, Eugene C., MD 11/11/20 0718
Reordered from: carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Order Details

Order Details

Priority	Expected	Study Status
	3/12/2020 12:44 PM	

Order Details

Frequency	Duration	Priority	Order Class
None	None	None	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
03/12/20 1006	Pend	Interface, Surescripts In	
03/12/20 1244	Sign	Lai, Eugene C., MD	Reorder from Order: 9125748
03/12/20 1244	Taking Flag Checked	Lai, Eugene C., MD	
11/10/20 1105	Reorder	Lai, Eugene C., MD	To Order: 335306865
11/11/20 0718	Discontinue	Lai, Eugene C., MD	

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306860] DISCONTINUED

Dose, Route, Frequency: As Directed
Dispense Quantity: 540 tablet Refills: 3

Sig: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY

Start Date: 03/12/20 End Date: 11/11/20

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Discontinued by: Lai, Eugene C., MD on 11/11/2020 07:18

Written Date: 03/12/20 Expiration Date: 03/12/21
Original Order: carbidopa-levodopa (SINEMET) 25-100 mg per tablet [9125748]

Providers

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Medications - All Orders

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [335306860]

Electronically signed by: **Lai, Eugene C., MD on 03/12/20 1244** Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 03/12/20 1244 Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD Ordering mode: Standard
Frequency: 03/12/20 - 11/11/20 Class: Normal
Released by: Lai, Eugene C., MD 03/12/20 1244 Discontinued by: Lai, Eugene C., MD 11/11/20 0718
Reordered from: carbidopa-levodopa (SINEMET) 25-100 mg per tablet [9125748]

03/12/2020 - Refill in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #
3/12/2020 10:06 AM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100076263215

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted] 941, Sex: M
Visit date: 2/12/2020

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Atassi, Farah

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of Neurology	6560 Fannin Street Suite 802 Houston TX 77030-2725	713-441-3780	713-790-5079

Research Study Linked to Documentation on 2/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 2/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907
No Known Allergies

History as of 2/12/2020

Medical History as of 2/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Surgical History as of 2/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Family History as of 2/12/2020

Family History as of 2/12/2020

Substance & Sexuality History as of 2/12/2020

Tobacco Use as of 2/12/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—
Types	**Comments**	**Smokeless Tobacco**	**Smokeless**	**Source**

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

		Status	Tobacco Quit Date	
—	—	Never Used	—	Provider

Alcohol Use as of 2/12/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 2/12/2020

Drug Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 2/12/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 2/12/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 2/12/2020

Occupational as of 2/12/2020

Occupational last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Socioeconomic as of 2/12/2020

Socioeconomic last reviewed by Riley, Lillian R, MA on 2/12/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Social Documentation History as of 2/12/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 3/13/2019 — Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/1/2019 — End date: 6/1/2021
Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
Authorized by: Lai, Eugene C., MD — Ordered on: 1/8/2020
Start date: 1/8/2020 — End date: 7/14/2020
Quantity: 30 tablet — Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.
Authorized by: Lai, Eugene C., MD — Ordered on: 2/12/2020
Start date: 2/12/2020 — End date: 7/14/2020
Quantity: 180 tablet — Refill: 3 refills by 2/11/2021

rivastigmine (EXELON) 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.
Authorized by: Lai, Eugene C., MD — Ordered on: 2/12/2020
Start date: 2/12/2020 — End date: 6/12/2020
Quantity: 90 patch — Refill: 3 refills by 2/11/2021

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Stopped in Visit

None

Progress Notes

Progress Notes

Atassi, Farah at 2/12/2020 1455

Author: Atassi, Farah
Filed: 2/12/2020 3:06 PM
Status: Signed

Service: —
Encounter Date: 2/12/2020
Editor: Atassi, Farah (Clinical Trials Mgr)

Author Type: Clinical Trials Mgr
Creation Time: 2/12/2020 2:55 PM

Robert T Brockman was approached to participate in Biological Markers for Nervous System Immune and Free Radical-Mediated Processes in Amyotrophic Lateral Sclerosis
Study -Parkinson's disease subtype. The details of the study were explained including all the contents of the informed consent. The participant was provided a copy of the current, IRB approved, informed consent form to read. Ample time was provided in a quiet location for the participant to read the form and ask questions. Questions and concerns were addressed to meet their satisfaction and understanding. He demonstrated understanding that this is a research study, and their participation was voluntary and revocable at any time. He indicated that they would like to participate in the study, and the form was signed without alteration by Robert T Brockman on 02/12/2020. A copy of the signed consent form was provided. No study procedures were performed prior to signing of the consent form.
We are able to draw one green tube only. He states that we will repeat to draw his blood in the next visit and he will drink a lot of fluid before the visit. I

Note Electronically Signed by Farah Atassi.

Electronically signed by Atassi, Farah at 2/12/2020 3:06 PM

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

All Orders

No orders found

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #
2/12/2020 2:55 PM	Atassi, Farah	HMNI Stanley H Appel Dept of Neurology	2100075002592

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/12/2020

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

02/12/2020 - Documentation in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans

Research Consent Form

Scan on 2/12/2020 3:13 PM: PD immune study consent and informed concent process documentation 02/12/2020

Scan (below)

Methodist RESEARCH INSTITUTE

MRN:003768603
CSN:2100073097942
Brockman, Robert T
MCM [redacted]1941 (78 yrs)
Appt. Date:1/08/20
Eugene C. Lai

Study Participant Identifier: PP_039 Study Name/Identifier: RTB

Informed Consent Process Documentation

Please indicate **"yes" or "no"** by each line as appropriate (if no, you must explain in the notes section below):

- ☑ Yes ☐ No: Study Participant &/or LAR was given a copy of the Informed Consent Form (ICF) to read.
- ☑ Yes ☐ No: Ample time was given to the study participant to read and ask questions.
- ☑ Yes ☐ No: All questions and concerns were addressed prior to participant signing consent form.
- ☑ Yes ☐ No: A copy of the signed consent form was provided to the study participant &/or LAR.
- ☑ Yes ☐ No: No study procedures were performed prior to signing of the consent form.
- ☑ Yes ☐ No: Copy of the signed ICF & Research Notification Form w/patient ID label affixed on documents for filing in the chart (to be scanned to the EMR)

The details of this research study were discussed with the study participant &/or patient's legally authorized representative (LAR). The study was explained in detail including all the contents of the informed consent document. The patient/study participant (or patient's legally authorized representative) was encouraged to ask questions. All questions were answered to the satisfaction of the patient/study participant (or patient's legally authorized representative). The patient/study participant (or patient's legally authorized representative) was given adequate time to read the informed consent form and the opportunity to discuss it. The study participant or LAR demonstrated understanding of the informed consent document and indicated that they would like to participate in the study. The study participant demonstrated understanding that this is a research study. The IRB-approved informed consent form document was signed without alteration by the patient/study participant (or patient's legally authorized representative). A copy of the informed consent form document was placed in the patient/study participant-specific record, and a signed copy was given to the patient/study participant. No activities specifically related to the research were started until after the execution of the consent.

The study participant or subjects legally authorized representative signed informed consent document version. Number (as noted on the ICF document) Version 1 on 02/07/2019.

Farah Atassi — Signature of Person that Obtained Consent
02/12/2020 — Date

Comments/Notes:- I was able to draw only one tube, pt said that we can repeat the blood draw next visit and he will make sure he will drink a lot of liqu

Per Subject, Mr./Ms._____ has indicated that the following person(s) may be communicated with regarding their research involvement:

Name	Relationship	Phone/Email	Comments *(e.g. (A) only appt notification or reminders w/ minimal or no detailed communications OR (B) okay to have more detailed conversations.)*

A) Okay per subject to leave recorded reminders or BASIC message on family/friend's phone
B) Okay per subject to leave/give detailed message and instructions on phone or email

Version 5/2014

HOUSTON Methodist LEADING MEDICINE

We are asking you to consent to participation in a research study. Your participation is voluntary.

This is a research study to find out if your Parkinson's Disease involves immune cells from your body in a similar manner to those that have been found in patients with ALS. You will be asked to give samples of your blood, urine and spinal fluid (if you are having a spinal tap as part of your regular treatment). You would be asked to donate between 30-70 ml (less than 5 tablespoons) of blood while you are at your regularly scheduled clinic visit.

There are risks to being in this study that are described in this document. Some risks include: bruising from the blood draw or loss of confidentiality if computer security is compromised. There is no physical benefit to you for participating in the study although you may feel good that you are helping the scientist to understand this disease and others.

If you are interested in learning more about this study, please continue reading below.

Informed Consent for Participation in Research

CONCISE SUMMARY

Participant's Name: Robert T. Brockman **Subject ID Number:** PP_039

Official Study Title: BIOLOGICAL MARKERS FOR NERVOUS SYSTEM IMMUNE AND FREE RADICAL-MEDIATED PROCESSES IN AMYOTROPHIC LATERAL SCLEROSIS (ALS) Substudy - Parkinson's Disease

Principal Investigator: Stanley H. Appel, MD

Before consenting to participate in this research study, you should have enough time to read the information in this form, or have it read to you. A member of the research team will discuss it with you. Be sure to ask questions about anything that is not clear before giving consent.

You can choose not to participate at any time, even after starting the study, without any penalty or loss of benefits to which you are entitled.

You will have procedures done that are considered research and may or may not be a part of the usual care for you condition. If you decide to participate, your private health information will be collected; however the researchers in this study will take appropriate measures to ensure confidentiality of your information. In the case you are injured as a result of the study, medical treatment is available.

FOR IRB OFFICE USE ONLY (Do not alter or modify in any way)

Pro No. Pro00001058

Page 1 of 7

Consent Approval Date: 02/07/2019
Consent Version: 1
Main ICF template v. December 2017

MRN:003768603
CSN:2100073097942
Brockman, Robert T
MCM [redacted] 1941 (78 yrs)
Appt. Date:1/08/20
Eugene C. Lai

If you go to Houston Methodist or another healthcare facility or provider for any reason while participating in this study, you should inform them that you are involved in this research study, as it may impact the type(s) of care provided and protect your safety.

Why me: You are being asked to participate in a research study because you have been diagnosed with Parkinson's Disease (PD).

Study Summary: To collect T-regulatory cells (special cells from your immune system) from your blood. These cells may have an effect on the course of a disease called Amyotrophic Lateral Sclerosis (ALS) and may be involved with your Parkinson's Disease. Through your participation in another part (called an "arm") of this study, the investigator would like to conduct additional studies.

The purpose of this study is to study your blood, urine or spinal fluid (if you have a spinal tap as part of your clinical treatment).

This study will be a collection of body fluids to test for responses by your immune system through examining T-regulatory cells, their function and other component of your cellular system.

The number of study participants that will be enrolled at Houston Methodist will be open-ended. There is no set limit of people who may give samples of their bodily fluids for research exploration.

What other choices do I have?
All research is voluntary and you have the choice to not participate.

What extra test and procedures will I have if I take part in the study?

The only tests or procedures that you will have if you participate are blood draws or urine samples requested when you come for your office visit. If your doctor determines that it is in your best interest to undergo a procedure called a spinal tap, we would request that you permit any extra fluid, not used for testing, to be used in our laboratory

What risks will I face by taking part in the study and how will Researchers protect me from these risks?
Some risks include: bruising from the blood draw or loss of confidentiality if computer security is compromised. There is no physical benefit to you for participating in the study although you may feel good that you are helping the scientist to understand this disease and others.

As with any research study, there may be additional risks that are unknown or unexpected. If these become known, the study team will notify you in a timely manner of any changes that may change your willingness to participate. If new information is provided to you after you have joined the study, it is possible that you may be asked to sign a new consent form that includes the new information.

The researchers have taken steps to minimize the risks of this study. Blood will only be drawn by skilled medical personnel under properly sanitary conditions. Loss of confidentiality is taken very seriously at our institution and we strive to protect your personal data by having limited access to documents and all computers are password protected. Your samples will be given a code number so that they will not be identifiable once they leave the doctor's office.

Please tell the researchers in the contact section about any injuries, side effects, or other problems that you have during this study. You should also tell your regular doctors.

How could I and others benefit if I take part in this study?

This study may help us learn things that may help people in the future but will not be of help to you and your current medical condition.

What is the cost of participating in this study?

The study will cover the cost of the blood draw if you are not having other blood work done for your clinical treatment. To avoid having more than one blood draw done, we will make every attempt possible to have blood for this study drawn at the same time you are tested for your clinical care.

The cost of your usual blood tests or if a spinal tap is required by your treating physician will be your /your insurance company's responsibility.

You will be responsible for your normal co-payments and co-insurance/deductibles.

If you have questions about the cost of participation, ask for more information before deciding to participate in the study.

Will I be paid for participating in this study?

You will not be paid for taking part in the study.

Who could profit or financially benefit from the study results?

If commercial products or other valuable discoveries result from this research project, these products and discoveries could be patented, licensed, or otherwise developed for commercial sale by Houston Methodist or the study Sponsor or their respective designees. If this should occur, there are no plans to provide financial compensation to you. There are no plans for you to share in the patent rights, other ownership rights, or rights to control the commercial products and discoveries that may result from this research project.

If I take part in this study, can I also participate in other studies?

Being in more than one research study at the same time, or even at different times, may increase the risks to you. It may also affect the results of the studies. You should not take part in more than one study without approval from the researchers involved in each study.

If I want to stop participating in the study, what should I do?

If you wish to stop your participation in this research study for any reason you should let the principal investigator/study coordinator know as soon as possible so that you can stop safely. You may be asked why you are leaving the study and your reasons for leaving may be kept as part of the study record. If you decide to leave the study before it is finished, please tell one of the persons listed in "Contact Information".

Could the researchers take me out of the study even if I want to continue to participate?

The researchers could remove you from the study if:

- ✓ The researcher believes that it is not in your best interest to stay in the study.
- ✓ You become ineligible to participate.
- ✓ Your condition changes and you need treatment that is not allowed while you are taking part in the study.
- ✓ You do not follow instructions from the researchers.
- ✓ The study is suspended or canceled.
- ✓ If you are taken out of active participation, ongoing follow-up may continue.

What happens if I get hurt, my condition worsens, or have other problems as a result of this research?

If you are injured as a direct result of this study, medical care is available. In general, no long-term medical care or financial compensation for research-related injuries will be provided by Houston Methodist. You do not waive (give up) any legal rights by signing this informed consent form.

What information about me could be seen by the researchers or by other people? Why? Who might see it? How will it be protected?

Release of Health Information – If you decide to participate in this study, information about your health may be used or disclosed (shared outside of the Hospital) for the purposes of conducting this study. This information may include information from your medical record that is relevant to this study, such as your medical history, medications, test results, diagnoses, treatments, operative reports (reports from operations that you have undergone), and discharge summaries. It may also include information relating to: Human Immunodeficiency Virus ("HIV") infection or Acquired Immunodeficiency Syndrome ("AIDS"); treatment for or history of drug or alcohol abuse; or mental or behavioral health or psychiatric care. Information collected by the study doctor and/or research staff specifically for this study, such as test results, blood samples, physical examinations, information about possible side effects, and surveys you might be asked to complete could also be used or disclosed.

Individuals that may use or release this information include: physicians, physicians' office staff, hospital staff, the study doctor, and authorized members of the study doctor's research staff. These individuals may release this information to the study doctor, authorized members of the study doctor's staff, as well other researchers, the Institutional Review Board (IRB), the United States Food and Drug Administration (FDA) and its representatives, and other government agencies.

In most cases, the information released to the above listed individuals or entities will not contain your name, social security number, or any other personal information. However, authorized representatives of your study doctor, IRB, FDA, or other government agencies may review records

containing personal information to make sure that the study information is correct. Because of the need to provide information to these parties, absolute confidentiality cannot be guaranteed.

Use of Information – This information may be used to determine whether you meet all requirements for participation in the study, to monitor your healthcare during the study, to enable the sponsor to answer the scientific questions for which the study was designed, and to ensure that the study has been done properly. Examples of the use of this information are as follows: the sponsor may use the information in submissions to government agencies throughout the world, to request approval of the study drug or device; the sponsor may use the information for reporting adverse events to government agencies, such as the FDA; the sponsor may also transfer the information to business partners or companies it hires to provide study-related services; the sponsor may also provide overall study results, including your information, to other study doctors; and the sponsor may reanalyze the data from this study in the future or combine it with data from other studies for analysis. In addition, both the sponsor and the study doctor may use the information to prepare reports or publications of the study results. However, when results of the research study are reported in medical journals or at scientific meetings, the people who were in the study are not named and identified. Therefore, your names would not be disclosed in any presentation or publication.

You need to understand that once your information has been released, it may no longer be protected by US federal regulations relating to data privacy and could be used or re-disclosed in ways other than those listed in this section of the consent form.

You have the right to see and copy your medical records but information relating to this study may be withheld until the end of this study.

What happens to information about me after the study is over or if I cancel my permission?

If you stop participating in this study, you also have the right to revoke (withdraw) your authorization to disclose and use your information. Revoking your authorization means taking back the permission you gave the study doctor to send information about you to the sponsor or other people and entities. If you revoke your authorization, your doctor will not use or release any more information about you after receiving your request, except to tell the sponsor that you have stopped early and have revoked your authorization. However, the sponsor and the study doctor can still keep and use any information that it has already received to the extent necessary to preserve the integrity of the research study. To revoke this authorization, contact the research team. The research team will accept either a written or verbal request.

When does my permission expire?

Because this information is being disclosed for research use, there is no expiration date for the authorization to disclose and use this information. The sponsor may keep and continue to use your study information for many years. Your study doctor may need to add to or correct information about you even after your study participation is over; including providing updates of your health status if that is important to the purpose of the study. The review of your medical records may also take place after the study is over. This authorization will remain in effect unless you revoke it.

Authorization– By signing this consent form, you authorize use and disclosure of personal information to, and review of your medical records by, the people and entities described above.

You do not have to authorize this disclosure of information. However, if you do not, you will not be able to participate in this study.

What are my rights in this study?

Taking part in this study is your choice. No matter what decision you make, and even if your decision changes, there will be no penalty to you. You will not lose medical care or any legal rights.

For questions about your rights as a research participant, or if you have complaints, concerns, or questions about the research, please contact Susan M. Miller, M.D., M.P.H., Chair, Houston Methodist Research Institute Institutional Review Board for the Protection of Human Subjects, at 713-441-2750 or Ethan Natelson, MD, Chair, Houston Methodist Research Institute Institutional Review Board for the Protection of Human Subjects, at 713-441-5154. You may also contact the Director, HMRI Office of Research Protections at HMRI Office of Research Protections, 1130 John Freeman, MGJ6-016, Houston, Texas 77030. Ph: 713-441-7548

The research team will take proper precautions to ensure that any information regarding your identity obtained in connection with this research will remain confidential; **however, confidentiality cannot be guaranteed.**

Where can I get more information?

If you have any questions regarding your participation in this study, please ask us. If you have any additional questions later, please contact the researchers listed below to:

Principal Investigator: Stanley H. Appel, M.D.

Mailing Address: Houston Methodist Neurological Institute; 6550 Fannin, #802; Houston, Texas 77030 Telephone: (713) 441-3760

Study Coordinator: 713-441-3420. 713-441-5192

Optional Participation

Future Contact

Please indicate whether you would or would not be willing to let our researchers get in touch with you in the future, to ask whether you would be willing to contribute more tissue samples or data or participate in another study at that time:

Please √ check one: [X] Yes [ ] No

MRN:003768603
CSN:2100073097942
Brockman, Robert T
MCM [redacted]1941 (78 yrs)
Appt. Date:1/06/20
Eugene C. Lai

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Pro No. Pro00001058

Page 6 of 7

Consent Approval Date: 02/07/2019
Consent Version: 1
Main ICF template v. December 2017

Signatures

Study Participant or Legally Authorized Representative (LAR)

I have read this consent form or had it read to me. I have discussed it with the study team and my questions have been answered. I will be given a signed copy of this form. I agree to take part in this study including any options where I checked 'yes'.

Signature: R.T. Brockman **Date:** 2/12/2020 **Time:** 9 AM

Name (Print Legal Name): R.T. BROCKMAN

Legal Representative Information (If Applicable) Phone: _____

Relationship to Subject: ☐Parent ☐ Spouse ☐Child ☐Sibling ☐Legal Guardian ☐Other: _____

Reason subject is unable to consent for self: _____

Person Obtaining Consent:

I have given this research subject (or his/her LAR) information about this study that I believe is accurate and complete. The subject (or LAR) has indicated that he or she understands the nature of the study and the risks and benefits of participating.

Name: Farah Ataei Title: study coordinator

Signature: Farah Ataei Date: 02/12/2020 Time: 9:04 AM

Translation Service: I verbally translated the informed consent process and the conversation between the person obtaining consent and the study participant.

Name: _____ Organization: _____

Signature: _____ Date: _____ Time: _____

Witness ***(required if 'short form' used for translation, or when participant physically unable to read, write, talk or see):*** I was present as an impartial witness (not a member of the research team or family) for the informed consent process. I observed the above subject (or his/her legally authorized representative, if applicable) indicate consent.

If applicable participant has capacity to consent but is unable to sign, how did he or she indicate consent: _____

Witness Name: _____

Signature: _____ Date: _____ Time: _____

MRN:003768603
CSN:2100073097942
Brockman, Robert T
MCM [redacted]1941 (78 yrs)
Appt. Date:1/08/20
Eugene C. Lai

FOR IRB OFFICE USE ONLY (Do not alter or modify in any way)

Pro No. Pro00001058 ☐ Page 7 of 7

Consent Approval Date: 02/07/2019
Consent Version: 1
Main ICF template v. December 2017

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/12/2020

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Atassi, Farah

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of Neurology	6560 Fannin Street Suite 802 Houston TX 77030-2725	713-441-3780	713-790-5079

Research Study Linked to Orders Only on 2/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 2/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907
No Known Allergies

History as of 2/12/2020

Medical History as of 2/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Surgical History as of 2/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Family History as of 2/12/2020

Family History as of 2/12/2020

Substance & Sexuality History as of 2/12/2020

Tobacco Use as of 2/12/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—
Types	**Comments**	**Smokeless Tobacco**	**Smokeless**	**Source**

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

		Status	Tobacco Quit Date	
—	—	Never Used	—	Provider

Alcohol Use as of 2/12/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 2/12/2020

Drug Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 2/12/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 2/12/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 2/12/2020

Occupational as of 2/12/2020

Occupational last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Socioeconomic as of 2/12/2020

Socioeconomic last reviewed by Riley, Lillian R, MA on 2/12/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Social Documentation History as of 2/12/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 3/13/2019
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021
Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
Authorized by: Lai, Eugene C., MD
Ordered on: 1/8/2020
Start date: 1/8/2020
End date: 7/14/2020
Quantity: 30 tablet
Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.
Authorized by: Lai, Eugene C., MD
Ordered on: 2/12/2020
Start date: 2/12/2020
End date: 7/14/2020
Quantity: 180 tablet
Refill: 3 refills by 2/11/2021

rivastigmine (EXELON) 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.
Authorized by: Lai, Eugene C., MD
Ordered on: 2/12/2020
Start date: 2/12/2020
End date: 6/12/2020
Quantity: 90 patch
Refill: 3 refills by 2/11/2021

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Stopped in Visit

None

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Outpatient Referral

Ambulatory referral to Occupational Therapy [320668816] (Active)

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 1659**
Status: **Active**
Mode: Ordering in Verbal with readback mode
Communicated by: Atassi, Farah
Ordering user: Atassi, Farah 02/12/20 1406
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Frequency: Routine 02/12/20 -
Class: Outgoing Referral
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD occupational therapy 3 times a week for 8 weeks

Referral Details

Referred By		Referred To	Type	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Order: Ambulatory Referral To Occupational Therapy Reason: Specialty Services Required	**TIRR Memorial Hermann Memorial City OP Rehab POS** 929B N Gessner Rd 108 Houston TX 77024-2659 Phone: 713-797-5942 Specialty: Occupational Therapy	Occupational Therapy	Routine

Comment: LSVT BIG and LOUD occupational therapy 3 times a week for 8 weeks

Question	Answer
Let me know if the patient declines service or is unable to be contacted?:	No

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History Outpatient

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Date/Time	Action Taken	User	Additional Information
02/12/20 1406	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/12/20 1659	Verbal Cosign	Lai, Eugene C., MD	

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Ambulatory referral to Physical Therapy [320668815] (Active)

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 1659**
Status: **Active**
Mode: Ordering in Verbal with readback mode
Communicated by: Atassi, Farah
Ordering user: Atassi, Farah 02/12/20 1406
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Frequency: Routine 02/12/20 -
Class: Outgoing Referral
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Services Requested	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Referral Details

Referred By		Referred To	Type	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Order: Ambulatory Referral To Physical Therapy Reason: Specialty Services Required	**TIRR Memorial Hermann Memorial City OP Rehab POS** 929B N Gessner Rd 108 Houston TX 77024-2659 Phone: 713-797-5942 Specialty: Physical Therapy	Physical Therapy	Routine

Comment: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Question	Answer
Services Requested:	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?:	No

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History

Outpatient

Date/Time	Action Taken	User	Additional Information
02/12/20 1406	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/12/20 1659	Verbal Cosign	Lai, Eugene C., MD	

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Ambulatory referral to Speech Therapy [320668817] (Active)

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 1659**
Status: **Active**
Mode: Ordering in Verbal with readback mode
Communicated by: Atassi, Farah
Ordering user: Atassi, Farah 02/12/20 1406
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Frequency: Routine 02/12/20 -
Class: Outgoing Referral
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Referral Details

Referred By		Referred To	Type	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Order: Ambulatory Referral To Speech Therapy Reason: Specialty Services Required	**TIRR Memorial Hermann Memorial City OP Rehab POS** 929B N Gessner Rd 108 Houston TX 77024-2659 Phone: 713-797-5942 Specialty: Speech Pathology	Speech Pathology	Routine

Comment: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Question	Answer
Let me know if the patient declines service or is unable to be contacted?:	No

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/12/20 1406	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/12/20 1659	Verbal Cosign	Lai, Eugene C., MD	

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Outpatient Referral - All Orders

Ambulatory referral to Physical Therapy [320668815]

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 1659**
Status: **Active**
Mode: Ordering in Verbal with readback mode
Communicated by: Atassi, Farah
Ordering user: Atassi, Farah 02/12/20 1406
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Frequency: Routine 02/12/20 -
Class: Outgoing Referral
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Services Requested	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Ambulatory referral to Occupational Therapy [320668816]

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 1659**
Status: **Active**
Mode: Ordering in Verbal with readback mode
Communicated by: Atassi, Farah
Ordering user: Atassi, Farah 02/12/20 1406
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Frequency: Routine 02/12/20 -
Class: Outgoing Referral
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD occupational therapy 3 times a week for 8 weeks

Ambulatory referral to Speech Therapy [320668817]

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 1659**
Status: **Active**
Mode: Ordering in Verbal with readback mode
Communicated by: Atassi, Farah
Ordering user: Atassi, Farah 02/12/20 1406
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Frequency: Routine 02/12/20 -
Class: Outgoing Referral
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/12/2020

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #
2/12/2020 1:39 PM	Atassi, Farah	HMNI Stanley H Appel Dept of Neurology	2100074995304

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider	Authorizing Provider	Referring Provider
Lai, Eugene C., MD	Lai, Eugene C., MD	Pool, James L., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of Neurology	6560 Fannin Street Suite 802 Houston TX 77030-2725	713-441-3780	713-790-5079

Follow-up and Dispositions

- Return in about 2 months (around 4/12/2020) for Next scheduled follow up.

Level of Service

Level of Service
PR OFFICE OUTPATIENT VISIT 25 MINUTES

Research Study Linked to Office Visit on 2/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 2/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907
No Known Allergies

History as of 2/12/2020

Medical History as of 2/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Surgical History as of 2/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Family History as of 2/12/2020

Family History as of 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Substance & Sexuality History as of 2/12/2020

Tobacco Use as of 2/12/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
—	—	Never Used	—	Provider

Alcohol Use as of 2/12/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 2/12/2020

Drug Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 2/12/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 2/12/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 2/12/2020

Occupational as of 2/12/2020

Occupational last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Socioeconomic as of 2/12/2020

Socioeconomic last reviewed by Riley, Lillian R, MA on 2/12/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Social Documentation History as of 2/12/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020
None

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 3/13/2019 — Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/1/2019 — End date: 6/1/2021
Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
Authorized by: Lai, Eugene C., MD — Ordered on: 1/8/2020
Start date: 1/8/2020 — End date: 7/14/2020
Quantity: 30 tablet — Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.
Authorized by: Lai, Eugene C., MD — Ordered on: 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Start date: 2/12/2020
Quantity: 180 tablet

End date: 7/14/2020
Refill: 3 refills by 2/11/2021

rivastigmine (EXELON) 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.
Authorized by: Lai, Eugene C., MD
Start date: 2/12/2020
Quantity: 90 patch

Ordered on: 2/12/2020
End date: 6/12/2020
Refill: 3 refills by 2/11/2021

Stopped in Visit

None

Progress Notes

Progress Notes

Lai, Eugene C., MD at 2/12/2020 0800

Author: Lai, Eugene C., MD
Filed: 2/21/2020 8:42 PM
Status: Signed

Service: —
Encounter Date: 2/12/2020
Editor: Lai, Eugene C., MD (Physician)

Author Type: Physician
Creation Time: 2/12/2020 8:16 AM

NEUROLOGY FOLLOW-UP CLINIC VISIT

78-year-old ambidextrous man with a history of Parkinson's disease, mild cognitive impairment, REM sleep behavior disorder, ocular migraine, hyperlipidemia, hypothyroidism, atrial fibrillation, [redacted] Glaucoma, melanoma, [redacted]

He comes with his wife, Dorothy, for follow-up of his Parkinson's disease. Last visit was on 1/8/2020. He reports physically stable. Sleep is better with trazodone and clonazepam. Appetite is good. Basic activities of daily living are independent. Gait and balance are mildly unsteady. He has no recent fall. [redacted] He is still working full time as CEO of his software company. His wife needs to help him in the office these days. Memory is impaired but stable. He exercises regularly 3X/week in the Houstonian.

There is no new neurological complaint. His slowness and stiffness are under adequate control with carbidopa/levodopa 25/100 2 tablets 3X/day. He denies recent headache, dizziness, pain, weakness, confusion, dysarthria, dysphagia.

MEDICATIONS:	Sig
• apixaban (ELIQUIS) 2.5 mg tablet	TAKE 1 TABLET TWICE DAILY
• buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet	Take two tablets every morning and one every evening [redacted]
• carbidopa-levodopa (SINEMET) 25-100 mg per tablet	TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
• clonAZEPAM (KlonoPIN) 0.5 MG tablet	Take 1 tablet (0.5 mg total) by mouth nightly.
• levomefolate calcium (L-METHYLFOLATE ORAL)	Take one tablet by mouth daily to lower homocysteine
• levothyroxine (SYNTHROID) 75 mcg tablet	Take one tablet every morning for hypothyroidism

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

• omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule	Take by mouth.
• rivastigmine (EXELON) 9.5 mg/24 hr	Place 9.5 mg onto the skin daily.
• testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump	Place on the skin.
• traZODone (DESYREL) 50 MG tablet	Take 50 mg by mouth.

REVIEW OF SYSTEMS:
Constitutional: Negative for easy fatigue, lack of energy. Weight gain of about 4 lbs. since last visit.
Eyes: Positive for visual disturbance due to glaucoma.
ENT: Positive for hearing loss. No nose bleed, sore throat.
Respiratory: Negative for cough and shortness of breath.
Cardiovascular: Negative for chest pain, palpitation, leg swelling.
Gastrointestinal: Positive for mild constipation. No diarrhea, abdominal pain.
Genitourinary: Positive for nocturia, frequency, urgency. No dysuria.
Musculoskeletal: Negative for joint pain, joint swelling, muscle pain.
Skin: Negative for rash, lesion.
Hematological: Negative for bruising, bleeding, adenopathy.
Allergy/Immunology: Negative for allergy symptoms.
Psychiatric/Behavioral: [redacted] No agitation.
Neurological: See above.

FAMILY/SOCIAL HISTORY: Lives with wife. No cigarettes and rare alcohol.

EXAMINATION:
Vitals:

	02/12/20 0817	02/12/20 0820
BP:	132/67	129/80
BP Location:	Left arm	Left arm
Patient Position:	Sitting	Standing
Pulse:	78	75
Weight:	87.5 kg (193 lb)	
Height:	6' 0.5"	

General: Well developed and well nourished elderly man in no acute distress. He is subdued but pleasant and cooperative.
Physical: Head and face are normal. No pain or tenderness to palpation. No edema or rash. Mild hypomimia and hypophonia.
Neurological:
MS: He is alert and attentive. O x person, place, and time. He follows complex verbal commands. Memory is 5/5 immediate -> 0/5 delayed. Comprehension and expression are slower. Insight and judgment are mildly impaired. MoCA score (1/8/2020) = 20/30.
CN: II-XII symmetrical and adequate except bilateral hearing loss. EOM full and tongue is midline.
Motor: Strength is 5/5 and symmetrical except bilateral hip flexors, 5-/5. No tremor and mild rigidity in limbs.
Sensory: Decreased to vibration in both feet.
Coordination: F->N->F without dysmetria. Rapid alternating movements are slower bilaterally.
Gait: He arises from sitting without assistance. He walks with a slightly wide-based gait. Decreased arm swings and

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

hesitant in turning without assistance. He can perform heel, toe walking but not tandem walking.

	VISIT DIAGNOSES:	ICD-10-CM
1.	**Parkinson's disease (HCC)**	**G20**
2.	Mild cognitive impairment	G31.84
3.	[redacted]	
4.	Idiopathic peripheral neuropathy	G60.9

IMPRESSION:
Significant for: Clinical findings are consistent with Parkinson's disease with mild cognitive impairment.
He is under a lot of stress trying to still run his company by himself, and his wife is also stressed out.
He has signs of mild cognitive impairment and peripheral neuropathy with gait imbalance.
Neurological and cognitive examinations are without notable change from last visit.
Physical examination is stable.

PLANS:
Patient's neurologic condition is discussed with him and his wife.
He agrees to reduce his company responsibilities and work hours to decrease his stress.
He will benefit from physical and occupational therapies at TIRR Memorial city. Prescription will be sent.
Continue carbidopa/levodopa 25/100 2 tablets 3X/day for Parkinson symptoms.
Continue rivastigmine patch 9.5/24h for cognitive stabilization.
Continue trazodone 50 mg and clonazepam 0.5 mg at bedtime for sleep and RBD.
Continue bupropion 100 mg 2 tablets in the morning and 1 tablet at bedtime for mood stabilization.
Continue other present medications.
Keep physically and mentally active. Exercise regularly.
Return to clinic in 2 months.

Total Clinic Visit Time: 30 minutes.

PATIENT EDUCATION:
[x] Patient [x] Significant other(s)
Topic:
Disease specific issues [x]
Medications [x]
Medication Side effects [x]
Tests [x]
Treatment/follow-up plans [x]
Consults [ ]
Surgical plan [ ]
Teaching Method: Discussion [x] Handouts [ ]
Patient/family Response: Verbalize understanding and agree(s) with treatment plans [x]

Today I spent 20 minutes of visit time on counseling and patient education.

Eugene C. Lai, M.D., Ph.D.
Robert W. Hervey Distinguished Endowed Chair in Parkinson's Disease
Professor of Neurology and Neuroscience

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

Director, Neurodegenerative Disease Clinic

Stanley H. Appel Department of Neurology
Houston Methodist Neurological Institute &
Weill Cornell Medical School
6560 Fannin, Suite 802
Houston, Texas 77030
TEL. 713-441-0239
FAX. 713-790-5044

Electronically signed by Lai, Eugene C., MD at 2/21/2020 8:42 PM

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

apixaban (ELIQUIS) 2.5 mg tablet [320668813] (Discontinued)

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 0904**
Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 02/12/20 0904
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Standard
Frequency: Routine BID 02/12/20 - 365 days
Class: Normal
Discontinued by: Atassi, Farah 07/14/20 1338
Reordered from: apixaban (ELIQUIS) 2.5 mg tablet

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020 9:00 PM	

Order Details

Frequency	Duration	Priority	Order Class
2 times daily	365 days	Routine	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/12/20 0904	Sign	Lai, Eugene C., MD	Reorder from Order: 9125746
02/12/20 0904	Taking Flag Checked	Lai, Eugene C., MD	
07/14/20 1210	Reorder	Atassi, Farah	To Order: 335306862
07/14/20 1338	Discontinue	Atassi, Farah	

apixaban (ELIQUIS) 2.5 mg tablet [320668813] DISCONTINUED

Dose: **2.5 mg**
Route: **oral**
Frequency: **2 times daily**
Dispense Quantity: 180 tablet
Refills: 3

Sig: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Start Date: 02/12/20
End Date: 07/14/20 (ordered for 730 doses)
Discontinued by: Atassi, Farah on 7/14/2020 13:38

Written Date: 02/12/20
Expiration Date: 02/11/21
Original Order: apixaban (ELIQUIS) 2.5 mg tablet [9125746]

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Providers

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

rivastigmine (EXELON) 9.5 mg/24 hr [320668814] (Discontinued)

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 0904**
Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 02/12/20 0904
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Standard
Frequency: Routine Daily 02/12/20 - 365 days
Class: Normal
Discontinued by: Lai, Eugene C., MD 06/12/20 1626
Reordered from: rivastigmine (EXELON) 9.5 mg/24 hr

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/13/2020 9:00 AM	

Order Details

Frequency	Duration	Priority	Order Class
daily	365 days	Routine	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/12/20 0904	Sign	Lai, Eugene C., MD	Reorder from Order: 9125750
02/12/20 0904	Taking Flag Checked	Lai, Eugene C., MD	
06/12/20 1558	Reorder	Lai, Eugene C., MD	To Order: 335306861
06/12/20 1626	Discontinue	Lai, Eugene C., MD	

rivastigmine (EXELON) 9.5 mg/24 hr [320668814] DISCONTINUED

Dose: **1 patch** Route: **transdermal** Frequency: **daily**
Dispense Quantity: 90 patch Refills: 3

Sig: Place 1 patch on the skin daily.

Start Date: 02/12/20 End Date: 06/12/20 (ordered for 365 doses)
Discontinued by: Lai, Eugene C., MD on 6/12/2020 16:26

Written Date: 02/12/20 Expiration Date: 02/11/21
Original Order: rivastigmine (EXELON) 9.5 mg/24 hr [9125750]
Providers

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Medications - All Orders

apixaban (ELIQUIS) 2.5 mg tablet [320668813]

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 0904**
Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 02/12/20 0904
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Standard
Frequency: Routine BID 02/12/20 - 365 days
Class: Normal
Discontinued by: Atassi, Farah 07/14/20 1338
Reordered from: apixaban (ELIQUIS) 2.5 mg tablet [9125746]

rivastigmine (EXELON) 9.5 mg/24 hr [320668814]

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 0904**
Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 02/12/20 0904
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Standard
Frequency: Routine Daily 02/12/20 - 365 days
Class: Normal
Discontinued by: Lai, Eugene C., MD 06/12/20 1626
Reordered from: rivastigmine (EXELON) 9.5 mg/24 hr [9125750]

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals

Vital Signs - Last Recorded

Most recent update: 2/12/2020 8:21 AM by Riley, Lillian R, MA

BP	Pulse	Ht	Wt	BMI
129/80 (BP Location: Left arm, Patient Position: Standing)	75	6' 0.5"	87.5 kg (193 lb)	25.82 kg/m²

Flowsheets

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

Custom Formula Data

Row Name	02/12/20 0820	02/12/20 0817
Adult IBW/VT Calculations		
IBW/kg (Calculated)	—	78.75 -LR at 02/12/20 0818
Low Range Vt 6mL/kg	—	472.5 mL/kg -LR at 02/12/20 0818
Adult Moderate Range Vt 8mL/kg	—	630 mL/kg -LR at 02/12/20 0818
Adult High Range Vt 10mL/kg	—	787.5 mL/kg -LR at 02/12/20 0818
IBW/kg (Calculated) (lbs)	—	173.61 -LR at 02/12/20 0818
OTHER		
BMI (Calculated)	—	25.8 -LR at 02/12/20 0818
IBW/kg (Calculated) Male	—	78.75 kg -LR at 02/12/20 0818
IBW/kg (Calculated) Female	—	74.25 kg -LR at 02/12/20 0818
BMI	—	25.8 -LR at 02/12/20 0818
Total Weight Change	—	193 -LR at 02/12/20 0818
Total Weight Change	—	+193 -LR at 02/12/20 0818
Weight Change Since Last Visit	—	4 -LR at 02/12/20 0818
Weight Change Since Last Visit	—	+4 -LR at 02/12/20 0818
Internal Initial Weight - Reference Only	—	0 -LR at 02/12/20 0818
Fluid Needs	—	63260 -LR at 02/12/20 0818
BSA (Calculated - sq m)	—	2.11 sq meters -LR at 02/12/20 0818
MAP (Calculated)	96.33 -LR at 02/12/20 0821	88.67 -LR at 02/12/20 0819
Body Composition Analysis		
BMI	—	25.8 -LR at 02/12/20 0818
Dietitian Vitals		
BMI (Calculated)	—	25.8 -LR at 02/12/20 0818
IBW/kg (Calculated)	—	78.75 -LR at 02/12/20 0818
IBW/kg (Calculated) Female	—	74.25 kg -LR at 02/12/20 0818
IBW/kg (Calculated) Males	—	78.75 -LR at 02/12/20 0818
Fluid Needs		
Total Fluid Estimated Needs	—	63260 -LR at 02/12/20 0818

HOUSTON Methodist LEADING MEDICINE
HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

Data

Row Name	02/12/20 0820	02/12/20 0817
OTHER		
Change in SBP	-3 -LR at 02/12/20 0821	132 -LR at 02/12/20 0819

Encounter Vitals

Row Name	02/12/20 0820	02/12/20 0817
Enc Vitals		
BP	129/80 -LR at 02/12/20 0821	132/67 -LR at 02/12/20 0819
Pulse	75 -LR at 02/12/20 0821	78 -LR at 02/12/20 0819
Weight	—	87.5 kg (193 lb) -LR at 02/12/20 0818
Height	—	6' 0.5" -LR at 02/12/20 0818
Vital Signs		
BP Location	Left arm -LR at 02/12/20 0821	Left arm -LR at 02/12/20 0819
Patient Position	Standing -LR at 02/12/20 0821	Sitting -LR at 02/12/20 0819

Social Determinants

Row Name	02/12/20 08:18:38
Alcohol Use	
How often do you have a drink containing alcohol?	Never Data migrated from History -LR at 05/18/21 1428

Vital Signs

Row Name	02/12/20 0913
OTHER	
Stimulants	000 -DH at 02/12/20 0813
Sedatives	160 -DH at 02/12/20 0813
Narcotics	080 -DH at 02/12/20 0813

User Key

(r) = Recorded By, (t) = Taken By, (c) = Cosigned By

Initials	Name	Effective Dates	Provider Type	Discipline
DH	Hm Interface, Documentation Incoming	—	—	—
LR	Riley, Lillian R, MA	01/08/20 - 05/17/20	Medical Assistant	—

Patient Instructions

Will benefit from physical and occupational therapies at TIRR Memorial city.
Continue present medications.
Keep physically and mentally active. Exercise regularly.

HOUSTON Methodist LEADING MEDICINE
HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient Instructions (continued)

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Patient Instuctions

Patient Instructions History

Patient Instructions Revisions	Status	Date&Time	By User
Will benefit from physical and occupational therapies at TIRR Memorial city. Continue present medications. Keep physically and mentally active. Exercise regularly.	Addendum	02/21/2020 7:29 PM	LAI, EUGENE
Will benefit from physical and occupational therapies at YIRR Memorial city. Continue present medications. Keep physically and mentally active. Exercise regularly.	Addendum	02/12/2020 9:08 AM	LAI, EUGENE
Continue present medications. Keep physically and mentally active. Exercise regularly.	Signed	02/12/2020 8:33 AM	LAI, EUGENE

AFTER VISIT SUMMARY

Robert T. Brockman MRN: 003768603

2/12/2020 8:00 AM HMNI Stanley H Appel Dept of Neurology 713-441-3780

Instructions from Eugene C. Lai, MD

Will benefit from physical and occupational therapies at YIRR Memorial city.
Continue present medications.
Keep physically and mentally active. Exercise regularly.

Your medications have changed today

See your updated medication list for details.

Pick up these medications at Briargrove Pharmacy - Houston TX - Houston, TX - 6435 San Felipe

apixaban • rivastigmine
Address: 6435 San Felipe, Houston TX 77057
Phone: 713-783-5704

Return in about 2 months

(around 4/12/2020) for Next scheduled follow up.

What's Next

You currently have no upcoming appointments scheduled.

Today's Visit

You saw Eugene C. Lai, MD on Wednesday February 12, 2020. The following issues were addressed: Parkinson disease and Mild cognitive impairment.

Blood Pressure 129/80	BMI 25.82
Weight 193 lb	Height 6' 0.5"
Pulse 75	

Today's Medication Changes

Accurate as of February 12, 2020 9:52 AM.
If you have any questions, ask your nurse or doctor.

CHANGE how you take these medications

rivastigmine 9.5 mg/24 hr
Commonly known as: EXELON
Place 1 patch on the skin daily.
What changed: **See the new instructions.**

Changed by: Eugene C. Lai, MD

Today's Medication Changes (continued)

Where to Get Your Medications

These medications were sent to Briargrove Pharmacy - Houston TX - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057

Phone: 713-783-5704

- ☐ apixaban 2.5 mg tablet
- ☐ rivastigmine 9.5 mg/24 hr

Allergies

No Known Allergies

Preventive Care

Topic	Due
SHINGLES VACCINES (1)	**05/28/1991**

Current Health Issues

Dementia associated with Parkinson's disease
Parkinson disease

Patient Care Team

	Relationship	Specialty	Notifications	Start	End
Pool, James L., MD	**PCP - General**	Endocrinology		12/26/19	

Phone: 713-798-0180

MyChart Signup

For your convenience, Houston Methodist MyChart allows you to send messages to your doctor's office, view your test results, renew your prescriptions, schedule appointments and more. To sign up, go to HoustonMethodist.org/mychart and click on the **Sign Up Now** button in the "New User?" box. Enter your Houston Methodist MyChart Activation Code exactly as it appears below. You will not need this code once you have completed the sign-up process. This code will expire 90 days from the date of this After Visit Summary.

Houston Methodist MyChart Activation Code: QKXX4-7Z7B4-VV2WC
Expires: 3/28/2020 9:52 AM

If you have questions, please call 832.667.5694 to speak with our Houston Methodist Customer Service Team. Remember, do not use Houston Methodist MyChart if you have an urgent need or request. For medical emergencies, dial **911**.

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Your Medication List as of February 12, 2020 9:52 AM

ⓘ Always use your most recent med list.

AndroGeL 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump Generic drug: testosterone	
apixaban 2.5 mg tablet Commonly known as: ELIQUIS	Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.
buPROPion SR 100 MG 12 hr tablet Commonly known as: WELLBUTRIN SR	
carbidopa-levodopa 25-100 mg per tablet Commonly known as: SINEMET	
clonAZEPAM 0.5 MG tablet Commonly known as: KlonoPIN	Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
FISH OIL 100-160-1,000 mg capsule Generic drug: omega 3-dha-epa-fish oil	
L-METHYLFOLATE ORAL	
rivastigmine 9.5 mg/24 hr Commonly known as: EXELON	Place 1 patch on the skin daily.
SYNTHROID 75 mcg tablet Generic drug: levothyroxine	
traZODone 50 MG tablet Commonly known as: DESYREL	

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted] 941, Sex: M
Visit date: 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary (continued)

Visit Information

Date & Time	Provider	Department	Encounter #
2/12/2020 8:00 AM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100073526625

Coding Summary for this Encounter

Code	Description	Service Date	Service Provider	Qty
99214	PR OFFICE OUTPATIENT VISIT 25 MINUTES	2/12/2020	Lai, Eugene C., MD	1
	Dx: Parkinson's disease [G20], Mild cognitive impairment, so stated [G31.84], Other specified anxiety disorders [F41.8], Hereditary and idiopathic neuropathy, unspecified [G60.9]			

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/3/2020

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Atassi, Farah

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of Neurology	6560 Fannin Street Suite 802 Houston TX 77030-2725	713-441-3780	713-790-5079

Research Study Linked to Orders Only on 2/3/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/3/2020

Problems last reviewed by Lai, Eugene C., MD on 1/8/2020 1538

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 2/3/2020

Allergies last reviewed by Lai, Eugene C., MD on 1/8/2020 1538
No Known Allergies

History as of 2/3/2020

Medical History as of 2/3/2020

Medical last reviewed by Lai, Eugene C., MD on 1/8/2020
None

Surgical History as of 2/3/2020

Surgical last reviewed by Lai, Eugene C., MD on 1/8/2020
None

Family History as of 2/3/2020

Family History as of 2/3/2020

Substance & Sexuality History as of 2/3/2020

Tobacco Use as of 2/3/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 1/8/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—
Types	**Comments**	**Smokeless Tobacco**	**Smokeless**	**Source**

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

		Status	Tobacco Quit Date	
—	—	Never Used	—	Provider

Alcohol Use as of 2/3/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 1/8/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 2/3/2020

Drug Use last reviewed by Riley, Lillian R, MA on 1/8/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 2/3/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 1/8/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 2/3/2020

Socioeconomic as of 2/3/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 1/8/2020 1538

apixaban (ELIQUIS) 2.5 mg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: TAKE 1 TABLET TWICE DAILY
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 8/4/2018
End date: 2/12/2020

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

carbidopa-levodopa (SINEMET) 25-100 mg per tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — Informant: Family Member

rivastigmine (EXELON) 9.5 mg/24 hr *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 9.5 mg onto the skin daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 11/11/2019 — End date: 2/12/2020

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 3/13/2019 — Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/1/2019 — End date: 6/1/2021
Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
Authorized by: Lai, Eugene C., MD — Ordered on: 1/8/2020
Start date: 1/8/2020 — End date: 7/14/2020
Quantity: 30 tablet — Refill: 2 refills by 7/6/2020

Stopped in Visit

None

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Outpatient Referral

Ambulatory referral to Occupational Therapy [320668811] (Discontinued)

Electronically signed by: **Lai, Eugene C., MD on 02/03/20 1313** — Status: **Discontinued**
Mode: Ordering in Verbal with readback mode — Communicated by: Atassi, Farah

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Ordering user: Atassi, Farah 02/03/20 0957
Authorized by: Lai, Eugene C., MD
Frequency: Routine 02/03/20 -
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Class: Outgoing Referral
Discontinued by: Atassi, Farah 02/12/20 1340 [Entered in Error]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT- BIG Physical and occupational therapies 3 times a week for 8 weeks for Parkinson's disease

Referral Details

Referred By		Referred To	Type	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Reason: Specialty Services Required	**West, John David, PT** 2305 SAN FELIPE ST HOUSTON TX 77019-3401 Phone: 713-790-1221 Fax: 713-790-0254 Specialty: Occupational Therapy	Occupational Therapy	Routine

Comment: LSVT- BIG Physical and occupational therapies 3 times a week for 8 weeks for Parkinson's disease

Question	Answer
Let me know if the patient declines service or is unable to be contacted?:	No

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/3/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/03/20 0957	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/03/20 1313	Verbal Cosign	Lai, Eugene C., MD	
02/12/20 1340	Cancel	Atassi, Farah	Reason:Entered in Error

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Ambulatory referral to Physical Therapy [320668810] (Discontinued)

Electronically signed by: **Lai, Eugene C., MD on 02/03/20 1313**
Mode: Ordering in Verbal with readback mode
Ordering user: Atassi, Farah 02/03/20 0957
Authorized by: Lai, Eugene C., MD
Frequency: Routine 02/03/20 -
Quantity: 1

Status: **Discontinued**
Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Class: Outgoing Referral
Discontinued by: Atassi, Farah 02/12/20 1340 [Entered in Error]

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Diagnoses
Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Services Requested	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT- BIG Physical and occupational therapies 3 times a week for 8 weeks for Parkinson's disease

Referral Details

Referred By		Referred To	Type	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Reason: Specialty Services Required	**West, John David, PT** 2305 SAN FELIPE ST HOUSTON TX 77019-3401 Phone: 713-790-1221 Fax: 713-790-0254 Specialty: Physical Therapy	Physical Therapy	Routine

Comment: LSVT- BIG Physical and occupational therapies 3 times a week for 8 weeks for Parkinson's disease

Question	Answer
Services Requested:	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?:	No

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/3/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/03/20 0957	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/03/20 1313	Verbal Cosign	Lai, Eugene C., MD	
02/12/20 1340	Cancel	Atassi, Farah	Reason:Entered in Error

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Ambulatory referral to Speech Therapy [320668812] (Discontinued)

Electronically signed by: **Lai, Eugene C., MD on 02/03/20 1313**
Status: **Discontinued**
Mode: Ordering in Verbal with readback mode
Ordering user: Atassi, Farah 02/03/20 0957
Authorized by: Lai, Eugene C., MD
Frequency: Routine 02/03/20 -
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]
Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Class: Outgoing Referral
Discontinued by: Atassi, Farah 02/12/20 1339 [Entered in Error]

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT- LOUD speech therapy 3 times a week for 8 weeks for Parkinson's Disease.

Referral Details

Referred By		Referred To	Type	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Reason: Specialty Services Required	**West, John David, PT** 2305 SAN FELIPE ST HOUSTON TX 77019-3401 Phone: 713-790-1221 Fax: 713-790-0254 Specialty: Speech Pathology	Speech Pathology	Routine

Comment: LSVT- LOUD speech therapy 3 times a week for 8 weeks for Parkinson's Disease.

Question	Answer
Let me know if the patient declines service or is unable to be contacted?:	No

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/3/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/03/20 0957	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/03/20 1313	Verbal Cosign	Lai, Eugene C., MD	
02/12/20 1339	Cancel	Atassi, Farah	Reason:Entered in Error

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Outpatient Referral - All Orders

Ambulatory referral to Physical Therapy [320668810]

Electronically signed by: **Lai, Eugene C., MD on 02/03/20 1313**
Mode: Ordering in Verbal with readback mode
Ordering user: Atassi, Farah 02/03/20 0957

Status: **Discontinued**
Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD

Outpatient Referral - All Orders (continued)

Ambulatory referral to Physical Therapy [320668810] (continued)

Authorized by: Lai, Eugene C., MD
Frequency: Routine 02/03/20 -
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Ordering mode: Verbal with readback
Class: Outgoing Referral
Discontinued by: Atassi, Farah 02/12/20 1340 [Entered in Error]

Questionnaire

Question	Answer
Services Requested	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT- BIG Physical and occupational therapies 3 times a week for 8 weeks for Parkinson's disease

Ambulatory referral to Occupational Therapy [320668811]

Electronically signed by: **Lai, Eugene C., MD on 02/03/20 1313**
Mode: Ordering in Verbal with readback mode
Ordering user: Atassi, Farah 02/03/20 0957
Authorized by: Lai, Eugene C., MD
Frequency: Routine 02/03/20 -
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Status: **Discontinued**
Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Class: Outgoing Referral
Discontinued by: Atassi, Farah 02/12/20 1340 [Entered in Error]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT- BIG Physical and occupational therapies 3 times a week for 8 weeks for Parkinson's disease

Ambulatory referral to Speech Therapy [320668812]

Electronically signed by: **Lai, Eugene C., MD on 02/03/20 1313**
Mode: Ordering in Verbal with readback mode
Ordering user: Atassi, Farah 02/03/20 0957
Authorized by: Lai, Eugene C., MD
Frequency: Routine 02/03/20 -
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Status: **Discontinued**
Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Class: Outgoing Referral
Discontinued by: Atassi, Farah 02/12/20 1339 [Entered in Error]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT- LOUD speech therapy 3 times a week for 8 weeks for Parkinson's Disease.

02/03/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #
2/3/2020 9:45 AM	Atassi, Farah	HMNI Stanley H Appel Dept of Neurology	2100074561582

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 1/20/2020

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Lai, Eugene C., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of Neurology	6560 Fannin Street Suite 802 Houston TX 77030-2725	713-441-3780	713-790-5079

Research Study Linked to Scanned Document on 1/20/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 1/20/2020

Problems last reviewed by Lai, Eugene C., MD on 1/8/2020 1538

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 1/20/2020

Allergies last reviewed by Lai, Eugene C., MD on 1/8/2020 1538
No Known Allergies

History as of 1/20/2020

Medical History as of 1/20/2020

Medical last reviewed by Lai, Eugene C., MD on 1/8/2020
None

Surgical History as of 1/20/2020

Surgical last reviewed by Lai, Eugene C., MD on 1/8/2020
None

Family History as of 1/20/2020

Family History as of 1/20/2020

Substance & Sexuality History as of 1/20/2020

Tobacco Use as of 1/20/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 1/8/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco	Smokeless	Source

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

		Status	Tobacco Quit Date	
—	—	Never Used	—	Provider

Alcohol Use as of 1/20/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 1/8/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 1/20/2020

Drug Use last reviewed by Riley, Lillian R, MA on 1/8/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 1/20/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 1/8/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 1/20/2020

Socioeconomic as of 1/20/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Medication List

Medication List

This visit is during an admission. Changes to the med list made in this visit will be reflected in the After Visit Summary of the admission.

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

All Orders

No orders found

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 1/20/2020

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary (continued)

Visit Information (continued)

1/20/2020 9:06 AM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100073968397

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 1/20/2020

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans

Patient Questionnaire

Scan on 1/20/2020 9:09 AM: Dr. Eugene Lai new patient questionnaire.

Scan (below)

Methodist
Neurological Institute

Eugene C. Lai, M.D., PhD.
Professor of Neurology & Neuroscience
Department of Neurology
The Scurlock Tower
6560 Fannin St, Suite 802
Houston Texas 77082
Phone: 713-441-0239
Fax: 713-790-5044

PATIENT QUESTIONNAIRE

NAME: ROBERT (BOB) THERON BROCKMAN

DATE: OCTOBER 9, 2019

REFERRING PHYSICIAN: DR. JAMES E. POOLE Sr.

TELEPHONE NUMBER: 713-798-0180 - Poole

Please help us evaluate your problems by providing the following information:

Age: 78 Birthplace: St. PETERSBURG FLORIDA Ethnic Background: WHITE

Education (highest level attained): COLLEGE GRADUATE. BS' BA Suma Cum Laude Business

List all previous occupations (most recent first): Chairman + CEO of The Reynolds Company - AND The Founder - almost 50 years. IBM Service Bureau

What is the reason for this visit: Parkinson's Symptoms, stiffness memorary lapses Bradykinesia, Dopamine loss as indicated by Datscan, [redacted]

List your chief problem(s): Parkinson's, Atrial Fib, (see above).

Have you previously received a diagnosis for this problem(s): No (Yes)

Please specify when you were diagnosed: Early 2019, Late 2018

Have you received treatment for your problem(s): No (Yes)

Specify the treatment and when it was received: Dr. Joseph Jankovic - Sinemet Exelon Patch

If you answered **YES** to the above two questions, please provide your physician's name(s) and specialty: Dr. Joseph Jankovic - 713-798-7438. Dr. K. Lance Gould

[redacted]

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

Please circle illnesses below **in close relatives:**

Parkinson's Disease Gait Imbalance Stroke Seizure Tremor

[redacted]

Which of the above illnesses or other illnesses **have you had:** Bladder Cancer - cured. Moderate dementia ~~mild from Agent Orange~~

Have you had any serious injuries such as accidents or broken bones: (No) Yes

Please explain and give dates:

INJURY	DATE
	/ /
	/ /
	/ /

Please list all previous surgeries, date performed and the reason performed.

SURGERY	DATE	REASON
Bladder Cancer Removal	/ /	Dr. Seth Lerner ~~Cancer~~
Bladder Cancer Removed 2nd	/ /	Dr. Seth Lerna - cured {713-798-4001}
	/ /	
	/ /	
	/ /	

Are you allergic to any medications: (No) Yes

If YES, Please list:

Do you use tobacco now? (No) Yes In the past: (No) Yes

If YES, type and amount used:

Do you drink alcohol? (No) Yes

If YES, type and amount used: Stopped - used to drink heavily on fishing trips; not during work weeks

Page 2 of 6

MEDICATION LIST

Please list all medications you are currently taking:

DRUG NAME	DATE BEGAN Length of time used	DOSE (strength)	How many times per day?	REASON
Exelon Patch	~~3/13/19~~ ~~1/30/19~~	9 morning, Patch/24hrs.	morning 1/D	Parkinsons
Sinemet	11/30/19	1 tab/3 times/d	1/3/D.	Parkinsons
Elixir	Appox 3 yrs.	2.5 Mg.	1 tab AM, 1 PM	A-Z-6
Wellbutrin	1/13/19	100 mg pm 200 mg am	night morning	[redacted]
Synthroid	Appox. 28 yrs.	75 mcg	1/D	Hypothyroid Low
Androgel	Appox. 10 yrs.	50 mg/5 gm gel	1/D	Low T
Trazodone	3/13/19	50 mg	1/D night	Parkinsons

* Please bring ALL medications or a list of the medications you are taking to every office visit.

Thank you,

Eugene C. Lai

Eugene C. Lai, M.D., Ph.D.
Professor of Neurology

Page 3 of 6

APPOINTMENT FORM

DATE BOOKED: _____

APPT DATE: _____

BOOKED BY: _____

APPT TIME: _____

Patient Name: Robert (Bob) Theron Brockman, (Sr.)

AKA: _____ MRN: _____

Date of Birth: [redacted] 1941 SSN: [redacted] 3444

Address [redacted]

City: Houston State: TX Zip: 77024

Home phone: ( ) 713-680-9635 (use home #!) Work phone: ( ) 713-718-1800 (do not use this #!)

Cell phone: ( ) 713-442-9916 Pager: ( ) _____

Diagnosis 1: _____ DX2: _____

DX3: _____ DX4: _____

Does Patient have INSUREANCE?: No (Yes) SELF PAY? No Yes

HMO PPO CPO Indemnity Medicare Medicaid Workers Comp *see pg 5

REFERRING PHYSICIAN DICTIONARY

Referring Physician Name: James E. Poole, M.D. (713-798-0180) (I think so.)

Written Referral Received (Yes) No Specialty: G.P.

Address Baylor Comprehensive Clinic; 1977 Butler Blvd.

City: Houston State: TX Zip: _____

Phone: ( ) 713-798-0180 Fax: ( ) _____

UPIN: _____ MCAID TPI# _____

Date of Referral: Oct 2019 Authorization No: _____

Page 4 of 8

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

INSURANCE INFORMATION

Are you insured? (YES) NO Name of Insured: Robert T. Brockman

Insurance Company: Cigna Insurance Phone: 1-800-244-6224

Insured SSN/Certificate No: [redacted]-3444 Policy/Group No: 3329754

Employer: Reynolds + Reynolds Company Employer Phone: 718-718-1800

PCP: ID: U32122100 01 PCP Phone: 1-800-244-6224

Comments:

WORKER'S COMPENSATION INFORMATION NOT Accident

Insurance Carrier Name:

Address

City: State: Zip:

Insurance Carrier Phone No:

Employer's Name: Employer's Phone:

Address

City: State: Zip:

DATE OF INJURY: W/C CLAIM#:

Adjustor Name: Phone No:

Date Verified: Verified by:

Page 5 of 6

Primary Care Physician: James E. Poole, M.D.

Phone #/Address: 713-798-0180, 1977 Butler # 150

Pharmacy Name: Briargrove Pharmacy

Phone #: 713- 783 - 5704

EMERGENCY CONTACT INFORMATION

Relation to Patient: Wife Dorothy Kay Brockman

Name: [redacted]

Address: [redacted] Houston, TX 77024

Home phone #: 713- 461-3375 Call this #!

Cell #: - 713- 512-1270 - don't call this #!

or

Robert T. Brockman II - son 713-882-1908

Comments: Wife is healthy and alert and wants to help.

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

HOUSTON Methodist NEUROLOGICAL INSTITUTE

AUTHORIZATION FOR DISCLOSURE OF HEALTH INFORMATION FROM Department of Neurology

I. PATIENT INFORMATION

Patient Name: Robert (Bob) T. Brockman

Social Security Number: [redacted]

Patient's Mailing Address: [redacted] Ln.
Houston, Texas 77024

Telephone number: Work 713-680-9635 Home 713-718-1806 Cell 713-412-9916
713-718-1800
office - don't call! DO NOT CALL OFFICE!

II. INFORMATION TO BE DISCLOSED

I authorize Methodist Neurology to disclose my health information as follows, for service dates:

- ☒ Office Visit Notes ~~Only~~
- ☐ ~~History and Physical(s)~~
- ☐ ~~Operative Report(s)~~
- ☐ ~~Discharge Summary (ies)~~
- ☐ ~~CD of Imaging~~ ☐ ~~Pictures~~
- ☐ Laboratory Results (Last 12 Months)
- ☐ ~~Radiology and Imaging Reports~~
- ☐ Other Test Results _____
- ☐ ~~Pathology Slides, Blocks or Reports~~
- ☐ ~~Any Neuropsychological Testing and Sleep Studies~~

I understand that information used or disclosed pursuant to this authorization form may include information relating to Human Immunodeficiency Virus (HIV), or Acquired Immunodeficiency Syndrome (AIDS); treatment for or history of drug or alcohol abuse; or mental or behavioral health or psychiatric care.

III. INFORMATION IS TO BE DISCLOSED TO:

IV. *Please list any family members and/or non-medical persons that we have permission to discuss your health information with.*

Name	Relationship to patient	Phone Number
Dorothy K. Brockman	Wife of 51 years	713-461-3316
Robert T. Brockman IV	Only Son - age 45	713 882-1908

V. PURPOSE OF USE OR DISCLOSURE: _____

V. I authorize the disclosure of health information as described above. I understand:

- This authorization is valid for 180 days unless otherwise stated here: **Until Revoked**
- A photocopy or fax of this authorization is as valid as the original.
- I may revoke this authorization at any time by submitting a revocation in writing to Department of Neurology.
- If I revoke this authorization, the revocation will not apply to information that has already been released in good faith before the revocation was received.
- Treatment or payment may not be conditioned on my completion of this authorization form.

X R. T. Brockman
Signature of Patient or Qualified Personal Representative *

X 12/12/2019
Date

* If signed by a Qualified Personal Representative, the following must be completed:

Printed name of Qualified Personal Representative: _____

Legal Documentation showing Authority to Act on Behalf of the Patient: _____
(Example: Guardian of Patient, Executor of Estate)

TMH Physician Organization
Revised: August, 2005

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)

HM2138

I. PATIENT INFORMATION

Patient Name: [redacted] ROBERT (BOB) BROCKMAN
Date of Birth: [redacted] 1941 Social Security: XXX-XX-3444
Patient's Mailing Address: [redacted] Houston TX 77024
Telephone Number: Work 713-718-1800 Home 713-680-9635 Cell 713-412-9916

II. I hereby authorize Dr. James E. Pool & Dr. Joseph Jan Kovic
[Name of Houston Methodist Physician Office]

☒ TO DISCLOSE/RELEASE the specified information below: TO: Dr. Eugene C. Lai
[NAME OF ENTITY/PERSON RECEIVING]
6560 Fannin St. # 802, Houston 77030
[STREET ADDRESS AND ZIP CODE]
713-441-0239
[PHONE]
[FAX]

OR

☒ TO RECEIVE the specified information below: FROM: Dr. James E. Pool
[NAME OF ENTITY/PERSON DISCLOSING]
1977 Butler # 150, Houston TX
[STREET ADDRESS AND ZIP CODE]
713-798-0180
[PHONE]
[FAX]
Dr. Joseph Jankovic
713-798-7438 #9a
7200 Cambridge St, Houston 77030

III. Health Information to be disclosed (please check below):
Date(s) of service: 2017-2018-2019 & 2020 onward

☒ Entire Clinical Record ☒ Discharge Note ☒ Radiology and Imaging Reports ☒ Radiology Films
☒ History and Physical(s) ☒ Lab Results ☐ Clinic Progress Notes
☒ Other Test Results ☒ Other

IV. Purpose of Use/Disclosure: ☒ Continuum of Care OR ☐ Other (specify): transfer of care

V. I authorize the disclosure of health information as described above. I understand:

- Information used or disclosed pursuant to this authorization form may include information relating to Human Immunodeficiency Virus (HIV), or Acquired Immunodeficiency Syndrome (AIDS); treatment for or history of drug or alcohol abuse; or mental or behavioral health or psychiatric care.
- This authorization is valid for 180 days unless otherwise stated here:
- A photocopy or fax of this authorization is as valid as the original.
- I may revoke this authorization at any time by submitting a revocation in writing to the disclosing facility noted above.
- If I revoke this authorization, the revocation will not apply to information that has already been released in good faith before the revocation was received.
- I understand the information used or disclosed may no longer be protected by federal regulations and thus subject to re-disclosure by the recipient.
- Treatment or payment may not be conditioned on my completion of this authorization form.
- I may be asked to provide proof of my identity/guardianship with this authorization.
- Fees/charges will comply with all applicable laws and regulations. Payment is due prior to or at time of disclosure.
- My health information may be disclosed electronically or by other means.

X R.T. Brockman
Signature of Patient or Qualified Personal Representative*

X 12/12/2019
Date

*If signed by a Qualified Personal Representative, the following must be completed:

Printed name of Qualified Personal Representative

Legal Authority to Act on Behalf of the Patient
(example: Parent, Guardian, Executor of Estate)

HOUSTON Methodist LEADING MEDICINE

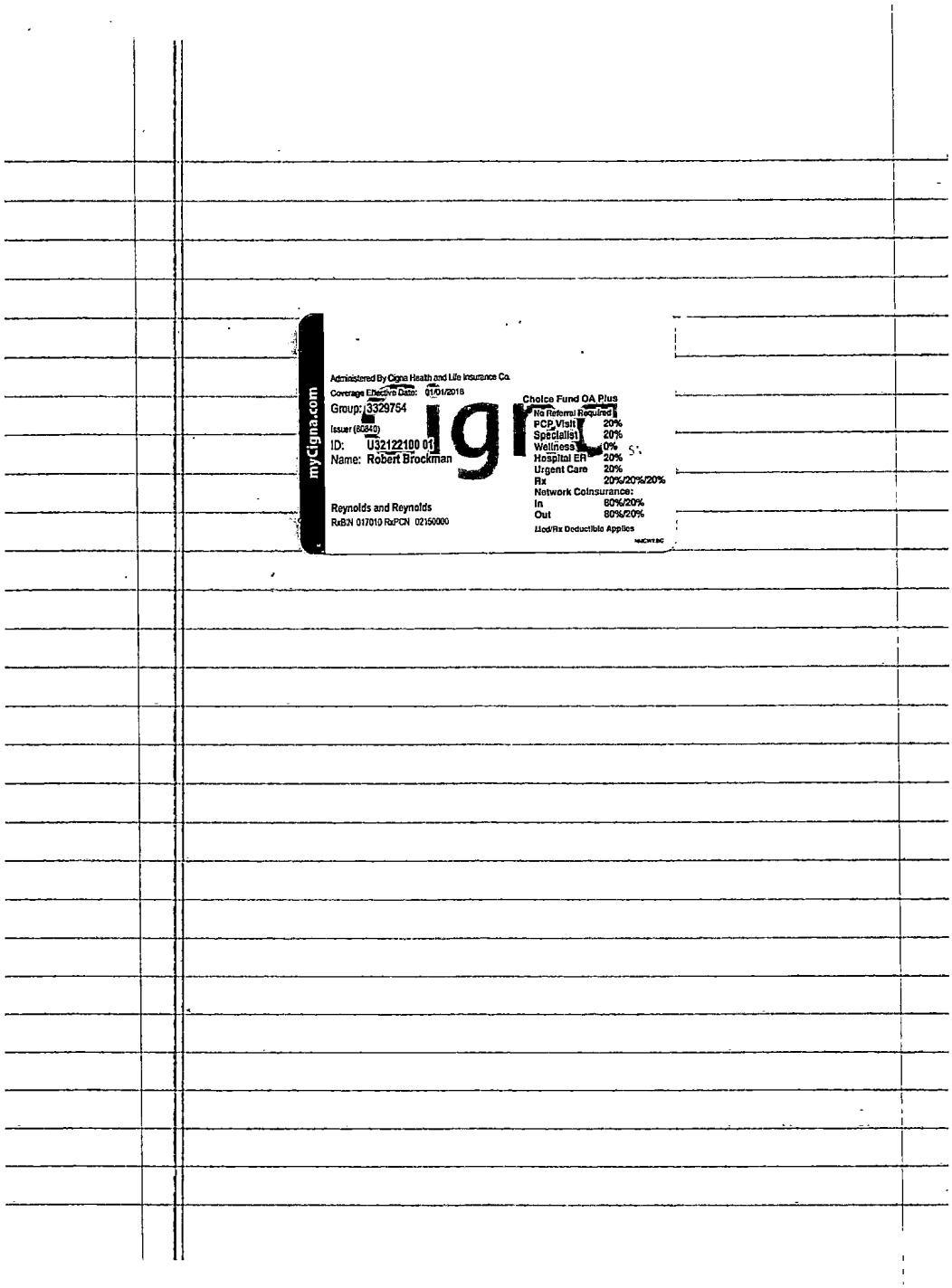
HMPCG / HMSPG
AUTHORIZATION TO
RELEASE RECORDS

White - Facility copy Yellow - Patient copy

FORM # HM2138 (02/2016)

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)



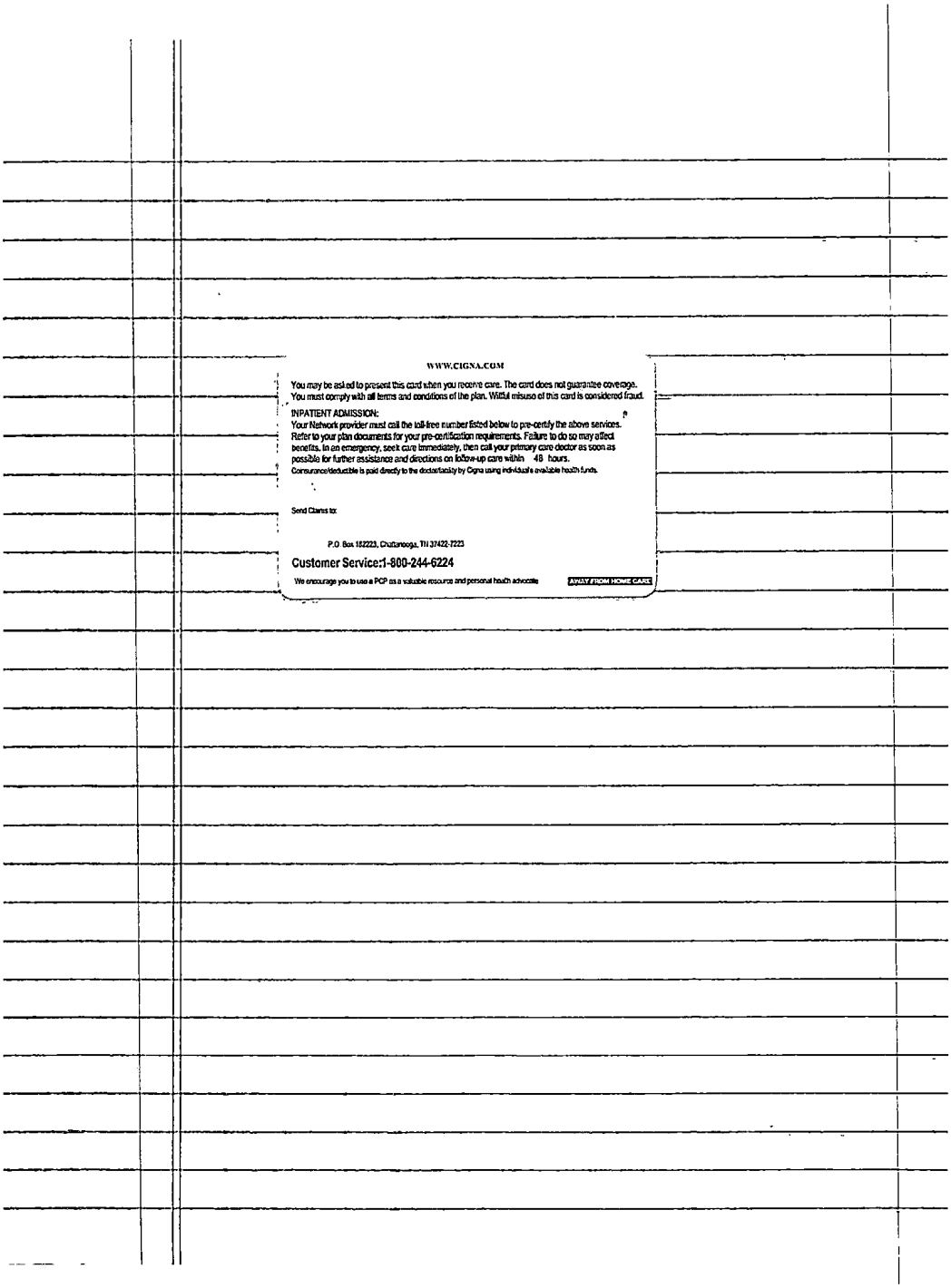
HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 1/20/2020

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans (continued)



WWW.CIGNA.COM

You may be asked to present this card when you receive care. The card does not guarantee coverage. You must comply with all terms and conditions of the plan. Willful misuse of this card is considered fraud.

INPATIENT ADMISSION:
Your Network provider must call the toll-free number listed below to pre-certify the above services. Refer to your plan documents for your pre-certification requirements. Failure to do so may affect benefits. In an emergency, seek care immediately, then call your primary care doctor as soon as possible for further assistance and directions on follow-up care within 48 hours.
Coinsurance/deductible is paid directly to the doctor/facility by Cigna using individual's available health funds.

Send Claims to:

P.O. Box 182223, Chattanooga, TN 37422-7223

Customer Service:1-800-244-6224

We encourage you to use a PCP as a valuable resource and personal health advocate

AWAY FROM HOME CARE

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 1/20/2020

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Lai, Eugene C., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of Neurology	6560 Fannin Street Suite 802 Houston TX 77030-2725	713-441-3780	713-790-5079

Research Study Linked to Scanned Document on 1/20/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 1/20/2020

Problems last reviewed by Lai, Eugene C., MD on 1/8/2020 1538

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 1/20/2020

Allergies last reviewed by Lai, Eugene C., MD on 1/8/2020 1538
No Known Allergies

History as of 1/20/2020

Medical History as of 1/20/2020

Medical last reviewed by Lai, Eugene C., MD on 1/8/2020
None

Surgical History as of 1/20/2020

Surgical last reviewed by Lai, Eugene C., MD on 1/8/2020
None

Family History as of 1/20/2020

Family History as of 1/20/2020

Substance & Sexuality History as of 1/20/2020

Tobacco Use as of 1/20/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 1/8/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—
Types	**Comments**	**Smokeless Tobacco**	**Smokeless**	**Source**

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

		Status	Tobacco Quit Date	
—	—	Never Used	—	Provider

Alcohol Use as of 1/20/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 1/8/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 1/20/2020

Drug Use last reviewed by Riley, Lillian R, MA on 1/8/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 1/20/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 1/8/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 1/20/2020

Socioeconomic as of 1/20/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Medication List

Medication List

This visit is during an admission. Changes to the med list made in this visit will be reflected in the After Visit Summary of the admission.

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

All Orders

No orders found

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 1/20/2020

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary (continued)

Visit Information (continued)

1/20/2020 9:12 AM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100073969105

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology Diagnosis Summary (continued)

01/20/2020 - Scanned Document in HMNI Stanley H Appel Dept of Neurology (continued)

Entire Encounter Scans

Outside Medical Record - Note

Scan on 1/20/2020 9:18 AM: Dr. Michele York clinical note 03/01/2019

Scan (below)

Baylor College of Medicine
GIVING LIFE TO POSSIBLE

Michele K. York, PhD, ABPP-CN
Board Certified Clinical Neuropsychologist
Associate Professor
Department of Neurology

CONFIDENTIAL NEUROPSYCHOLOGICAL EVALUATION

Patient Name:	Robert Brockman
Date of Birth (Age):	[redacted]1941 (77 yr.)
Date(s) of Evaluation:	03/01/2019
Evaluation Location:	BCM Medical Center, McNair Campus, 9th Floor
Referred by:	James Pool, MD
Referral Question:	Differential Diagnosis
CPT Code:	96116 (60 mins) 96121 (120 mins) 96136 (30 mins) 96137 (180 mins) 96132 (60 mins) 96133 (180 mins)

BACKGROUND AND REFERRAL INFORMATION

Mr. Brockman is a 77 year-old, right-hand dominant, Caucasian male with a two to three year history of short-term memory loss. He was referred by his physician for neuropsychological evaluation of his current cognitive, behavioral, and emotional functioning with the aim of informing medical differential diagnosis and facilitating clinical decision making. The following information was obtained during a clinical interview with Mr. Brockman and from available medical records.

Current Concerns and General Condition: Mr. Brockman and his spouse participated in the clinical interview. He was able to act as a reliable informant. Mr. Brockman reported declines in his short-term memory over the past 2 to 3 years. He reported that he is repeating himself, losing possession, and losing his train of thought and is more tangential. He forgets names of new individual and of familiar locations. He also finds it more difficult to complete tasks. His wife noted that he is clumsy getting out of the car and has hit curbs while driving and parking. He has increased difficulties with following directions. His wife noted spelling changes and mild stuttering in his speech. His speech is slowed and he has slowed response latencies. His decision making is also slowed, and he has difficulties multi-tasking.

Mr. Brockman reproted that he began taking Wellbutrin which has improved his mood. He noted that "It is clear that he is working too much." He denied anhedonia, depressed mood, heightened general anxiety, personality or behavioral changes, suicidal ideation, and auditory hallucinations. Sleep was described as adequate but he is a night owl and dozes off during the day. His wife reported that he began to act out his dreams a couple of years ago. He has decreased appetite and has lost weight. His wife noted that he does not speak as much. He reported that he has floaters in his visual fields. He denied visual hallucinations, but it is noted that later he pointed out a bug on the testing room floor that was not present to either the examiner or his wife.

Medical History: Medical history is remarkable for hypothyroidism, atrial fibrillation, bladder cancer with recurrence, tremor, micrographia, and back problems. He currently has plantar fasciitis, so he is not walking for exercise. He reported that he was hospitalized for a prostate infection four years ago and pericarditis. He reported an episode of vision changes in which he saw a bar of color on a spectrum that was moving. He noted he had this visual illusion for 20 minutes and then it went away. He was told that he might have had a visual headache. He began taking levodopa one month ago. His wife noted an improvement when he first started on the medication, but since the medication was increased, she reported that he has increasing clumsiness. He is scheduled to be evaluated by Dr. Jankovic for his movement disorder. Surgical history is notable for tonsillectomy, cataract surgery, and excision of a melanoma. He reported that when he was in the sixth grade he was hit on the top of the head with a hammer and may have suffered a concussion. He did not lose consciousness Familial medical

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Neuropsychology@bcm.edu

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Associate Professor
Department of Neurology

history is unremarkable for movement disorders or dementia. [redacted] He has been taking bupropion for two months, which has reportedly improved his mood significantly. He is taking trazodone to aid his sleep and reducing his REM Behavior Disorder. Mr. Brockman denied current use of tobacco or illicit drugs or a remote history of substance misuse/abuse. He quit drinking alcohol two to three years ago secondary to his atrial fibrillation. He denied a history of seizures, TIA/stroke, or migraines. Please refer to his chart for a listing of his current medications. He is on a large regimen of supplements and vitamins.

Social History: Mr. Brockman has been married for 50 years and they have one son. He currently lives with his spouse in their private residence. He earned a BA in Business and attended graduate school for one year in Marketing at The University of Florida. He reported that he was a good student. He is Chairman and CEO of Reynolds and Reynolds Company.

Behavioral Observations: Mr. Brockman was tested during a single session as an outpatient. He arrived on time and was accompanied by his spouse who participated in the clinical interview. General appearance was neat and clean. He exhibited shuffling and slow gait, slowed motor behavior, and a right hand tremor. His mood was neutral, and he had a flat affect. He had a masked face. Eye movements were normal. Vision (with corrective lenses) and hearing were adequate for the testing session. Conversational speech was coherent and goal-directed, but it was sparse with short phrases. There was no evidence of paraphasias. He evidence a slight stutter at times. He showed moderately decreased ability to follow directions, and he frequently needed repetition of directions and to be reoriented to task. He perseverated to previous tasks. The examiner needed to be concrete for him to understand the task instructions. His processing speed was exremely sloewd. He was cooperative but evidenced surrendering test-taking behavior. His attitude towards the examiner was appropriate and friendly. He lacked insight into his cognitive problems. During testing, the patient said he was not doing well, but he appeared very surprised. His handwriting was micrographic. He saw a bug on the floor of the testing room that was not present. The following results are thought to be an accurate estimation of his current cognitive abilities.

MEASURES ADMINISTERED

Montréal Cognitive Assessment (MoCA); Caregiver Neuropsychiatric Inventory (NPI-Q); Clock Drawing Test; Controlled Oral Word Association Test (COWAT version: FAS); General Anxiety Disorder 7-item Scale; Geriatric Depression Scale; Hopkins Verbal Learning Test-Revised (HVLT-R); Neuropsychological Assessment Battery (NAB subtest: Naming); Praxis Examination; Rey Complex Figure Test-Meyers Version; Semantic Fluency Test; Stroop Color-Word Interference Test (Stroop subtests: Color, Color-Word, and Word); Test of Premorbid Functioning (TOPF); Trail Making Test (TMT subtest: Trails A); Verbal Series Attention Test (VSAT); Wechsler Adult Intelligence Scale-IV (WAIS-IV subtests: Coding, Digit Span, Information, Similarities, and Visual Puzzles); Wechsler Memory Scale-4th Edition (WMS-IV subtests: Logical Memory II-Older Adult, Logical Memory I-Older Adult, Logical Memory Recognition-Older Adult, Visual Reproduction I, Visual Reproduction II, and Visual Reproduction Recognition); Instrumental Activities of Daily Living Scale (IADLS); Lawton and Brody Physical Self-Maintenance Scale (PSMS). Clinical Interview with patient and his spouse.

Mr. Brockman did not complete the Trail Making Test (TMT subtest: Trails B) and Wisconsin Card Sorting Test (WCST) measures due to cognitive/behavioral problems.

Informant questionnaires were sent home and completed by the patient's spouse. They were not returned by the time of the evaluation.

CONFIDENTIAL NEUROPSYCHOLOGICAL EVALUATION
Brockman, Robert

Michele K. York, PhD, ABPP-CN
Board Certified Clinical Neuropsychologist
Associate Professor
Department of Neurology

NEUROPSYCHOLOGICAL FINDINGS

The following clinical descriptors identify performance with the range of Standard Scores (average=100, standard deviation=15) indicated in parentheses: Very Superior (>130), Superior (120-129), High Average (110-119), Average, (90-109), Low Average (80-89), Borderline (70-79), and Deficient (<69). For diagnostic purposes, a cognitive deficit is considered a performance score that is >1.5 standard deviations away from the mean in the direction of poor performance compared to the reference group for that measure (i.e., Z-score) based on peers of similar age, gender, and education background as appropriate. This criterion is equivalent to a Standard Score <78, T-score <35, or a Scaled Score of <5).

Mental Status: Evaluation of Mr. Brockman's general mental status on the MoCA revealed a score of 19/30, which is below expectation. He was oriented (6/6) and short-term recall was 2/5. He was aided by category cueing for one word. He demonstrated difficulties with set shifting, drawing a cube, drawing a clock face with numbers and hands placed accurately, repeating one sentence, and with serial 7's and verbal fluency.

Intellectual: Premorbid level of intellectual functioning was estimated to be in the high average range (TOPF SS=114), based on single, atypical word reading skills. Mr. Brockman noted that the first word presented for him to read outloud was not a word ("two"). He was able to state the letters, but noted that he did not think that was a word and then stated he guessed it was two. Mr. Brockman was administered subtests from a measure of general intellectual functioning (WAIS-IV) and obtained scores ranging from borderline to high average yielding a pro-rated Full Scale IQ estimate of 87, which is in the low average range.

Attention/Concentration: Attention and mental tracking for overlearned verbal sequences was deficient for speed and for accuracy. Immediate auditory attention span for digits was low average with 7 digits forward, 3 digits backward, and 2 digits when re-ordering them in ascending sequence. Speed of single word reading and speed of color naming were deficient. Mental processing speed for manual code transcription was borderline impaired. Performance on a simple visual-motor sequencing task requiring scanning and mental tracking was borderline impaired with 0 errors.

Executive: Mr. Brockman's ability to inhibit a dominant verbal response in the face of incongruent visual stimuli was deficient. His abstract verbal reasoning was high average. Performance on a complex visual-motor sequencing task requiring scanning, tracking, and set-shifting was impaired and the task was discontinued.

Memory: Recall of culturally-based general knowledge was average. Immediate recall of verbally presented contextual material was deficient (SS=3). Delayed recall of the stories was deficient (SS=3). Retention of initially learned material was 11.1%. Recognition memory was average (16/23). Mr. Brockman began describing the WMS VR figures during LM immediate recall. Incremental learning for a semantically-categorized word list across 3 trials was borderline impaired (2, 5, and 6 words per trial), and delayed recall was in the deficient range with 0.0% retention which falls within the deficient range. On recognition memory assessment, 9/12 target words were correctly identified, 5 false positive errors were committed, with discrimination accuracy in the deficient range.

Immediate recall of basic geometric figures was deficient (SS=1). Delayed recall of the designs was deficient (SS=2). Retention of the initially learned material was 0.0%. Recognition memory was borderline impaired (1/7).

Language: Lexical fluency was low average with between 9 and 13 words per trial. Semantic fluency was deficient with 8 exemplars generated. Confrontation naming of pictured objects was average (29/31).

Visual-Perceptual: His drawing of a complex geometric design scored in the deficient range. His spatial reasoning ability to mentally arrange puzzle pieces was low average. Visuoconceptual ability to draw a clock was impaired

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Associate Professor
Department of Neurology

to command (CDT=3/10). He drew a micrographic clock face. The examiner produced a clock face for him, but he was unable to place the numbers accurately and drew a hand to the 10 and the 6 for 10 after 11. His copy of a clock was also impaired (CDT=6/10). He drew the clock face but the numbers were drawn in only the right side of the face and the hand size differentiation was not maintained.

Mood / Personality: On a self-report measure of anxiety, his responses fell in the mild range (GAD-7=7/21). On a face valid measure used to assess cognitive, emotional and physical symptoms of depression, Mr. Brockman endorsed the following, suggestive of within normal limits (GDS=8): boredom, feeling as though something negative is going to occur, preferring to stay home, worry about the future, declines in memory, poor energy, difficulties with concentration, and preferring to avoid social gatherings.

Activities of Daily Living: His spouse served as the informant completing a questionnaire regarding the patient's ability to complete basic and instrumental activities of daily living. Mr. Brockman reportedly has difficulties with self-care ADLs (PSMS=7/30) including ambulation. He requires mild assistance with instrumental activities of daily living (IADLs=9/31), most notably housekeeping. Although his wife did not report many functional declines, Mr. Brockman requires mild aid with his more complex ADLs.

Neurobehavioral: The patient's spouse completed an inventory assessing for the presence of neurobehavioral symptoms commonly associated with dementia, reportedly observing mild problems with agitation, anxiety, apathy, irritability, nighttime behaviors, and changes in appetite with moderate depression (NPI-Q severity=8; distress=11) which produce an overall minimal level of familial distress, with the exception of his depression and agitation which produces moderate distress.

SUMMARY AND IMPRESSION

Mr. Brockman is a 77 year-old, right-hand dominant, Caucasian male who was referred by his physician for evaluation of his current neuropsychological, behavioral, and emotional status. He currently operates in the low average range of general intellectual functioning (WAIS-IV FSIQ=87), which is a decline from his estimated premorbid intellectual functioning in the above average range. His MoCA was 19/30 (total), 6/6 (orientation), and 2/5 (short-term recall), which was significantly below expectation. Self-report of depression was within normal limits (GDS=8). Self-care ADLs (PSMS) were 7/30 and instrumental ADLs were 9/31. The NPI-Q (severity=8; distress=11) indicated problems with agitation, anxiety, apathy, irritability, nighttime behaviors, and changes in appetite, and depression for an overall minimal level of familial distress, with the exception of his depression and agitation which produces moderate distress.

Mr. Brockman demonstrated borderline impaired to deficient performances on measures of sustained attention/concentration, learning and recall of prose material and a word list, learning and recall of visual material, semantic fluency, executive functions (set shifting, inhibition, working memory, and problem solving), and visuoconstruction. Praxis was impaired for intransitive praxis tasks. These impaired performances were found within the low average to average ranges on measures of basic attention, fund of information, verbal and visual abstract reasoning, verbal fluency and naming,

This pattern of neuropsychological performance indicates a dementia of mild to moderate severity characterized by deficits in the areas of visuospatial functioning, verbal and nonverbal episodic memory, and executive functioning, with mild functional declines. To my knowledge, Mr. Brockman has not been diagnosed with a movement disorder. However, he demonstrates movements that may be consistent with a Parkinsonism. These

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abnormal movements taken together with his current diagnosis of dementia, new onset visual hallucinations and potential visual illusions, and REM Behavior Disorder, his pattern of cognitive impairments is consistent with Dementia with Lewy Bodies.

RECOMMENDATIONS

General:

- Mr. Brockman and his family should receive feedback regarding his current level of cognitive functioning.
- Continued pharmacologic treatment of his depression appears warranted.
- Mr. Brockman should be monitored for episodes of visual hallucinations. Although he did not report hallucinations on interview, he saw a bug on the floor in the testing room which was not present.
- You may wish to consider referring the patient and his family to psychoeducational counseling with the goal of developing appropriate coping strategies, maximization of current strengths to mitigate identified weaknesses, and assist in future life planning.
- Mr. Brockman does not pose a significant safety risk and as such, he should receive occasional supervision for self-care ADLs for safety and to monitor for future changes in his ability status. He should also receive occasional review of instrumental activities of daily living to monitor for future changes in his ability status, particularly for medication and personal financial management.

Memory Compensatory Strategies:

- Mr. Brockman should exercise caution when operating potentially dangerous household appliances (e.g., stove/range, irons, food processors, etc.). Using models with automatic shut-off features would be ideal.
- Mr. Brockman should refrain from cooking activities involving potentially dangerous appliances (e.g., stove, food processor, etc.).
- The use of a smartphone is recommended for recording important information, setting reminders, and is maintaining and organized schedule. Applications such as Google calendar, Remember the Milk, and the Reminders application for the iPhone or similar techniques may be helpful.
- It may be helpful to have a mobile phone or smartphone with him to allow easy access to telephone number he could contact in an emergency or when he cannot recall this information.
- Placing a large-type calendar or clock that includes the date in a highly visible location may assist him in maintaining better temporal orientation.
- The patient may benefit from the placement of a large dry-erase board in a prominent spot in the home where important information can be posted such as the date, the day's or week's schedule, the whereabouts of his spouse/family members, their time to return, or important telephone numbers.
- The patient's family may wish to consider presenting important information that Mr. Brockman needs to recall in a written format when possible to allow him to refer to and review the information as necessary.
- Mr. Brockman and his family should consider establishing a 'memory station' where he would consistently place personal items such as his keys, checkbook/wallet, glasses, etc. to help prevent future memory failures regarding lost objects and to reduce anxiety and misattributions regarding the occurrence of these events. He is also encouraged to use external memory aids such as shopping lists, calendars, timers, a pill minder, and "to do" lists whenever possible to mitigate common, everyday memory failures.
- To the extent possible, he should try to avoid distracting environments when performing detailed tasks such as financial management. Breaking tasks down into more manageable units to prevent overtaxing attentional resources is another possibility. In this way, a large task can be achieved a little at a time over a week instead of an overwhelming task all in one evening, for instance.

Michele K. York, PhD, ABPP-CN
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Social Activities and Other Intellectual Stimulation:

- The patient is encouraged to maintain or increase (to the extent safely possible) his current level of intellectual and physical stimulation to help improve stamina, buoy his mood, and maintain his current level of quality of life.
- Mr. Brockman may benefit from engaging in intellectual stimulation such as reading, assembling jigsaw puzzles, and other activities such as word search puzzles, crosswords, or Sudoku. Computer-based activities such as www.Lumosity.com or www.happyneuron-corp.com are options as well. Board games and familiar card or other games (e.g., dominoes, bridge, solitaire, etc.) may also be enjoyable.
- Regular physical exercise is recommended for its beneficial effects on brain health and cognitive maintenance.

Driving:

- Neuropsychological tests are an imperfect predictor of real-world driving abilities; however, given his deficits in memory, attention/concentration, executive functions, visuospatial abilities, and his recent diagnosis of DLB, he should be encouraged to discontinue driving given concerns over his safety, that of others on the roadways, and legal liability issues that could arise for the patient should he become involved in a motor vehicle crash.

Legal:

- If not already in place, a family member should obtain Durable Power of Attorney for healthcare and financial matters.

Patient and Caregiver Resources:

- The Alzheimer's Association (www.alz.org/texas; 713-314-1314) provides useful information and resources for family members of patients with Alzheimer's and other types of dementia.
- Mr. Brockman and his family may benefit from community resources for seniors in the Houston area at www.HoustonTx.gov/Health/Aging and through the Houston Area Parkinson's Society (hapsonline.org).

The current results will be useful as a baseline to which findings from subsequent evaluations may be compared. Neuropsychological re-evaluation is recommended in one year (or sooner if his condition appears to change rapidly or if he and/or his family have additional concerns) to monitor neuropsychological, mood, and personality changes and to update recommendations.

Thank you for allowing me to participate in the care of Mr. Brockman. Please do not hesitate to contact me if you have any further questions.

Michele K. York, PhD

Michele K. York, PhD, ABPP-CN
Board Certified Clinical Neuropsychologist

N.B. This assessment was conducted as a clinical evaluation and not as a forensic assessment. This fact was verbally confirmed with the patient at the outset of testing.

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 1/8/2020

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider	Authorizing Provider	Referring Provider
Lai, Eugene C., MD	Lai, Eugene C., MD	Pool, James L., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of Neurology	6560 Fannin Street Suite 802 Houston TX 77030-2725	713-441-3780	713-790-5079

Follow-up and Dispositions

- Return in about 1 month (around 2/8/2020) for Next scheduled follow up.

Level of Service

Level of Service
PR OFFICE CONSULTATION NEW/ESTAB PATIENT 80 MIN

Research Study Linked to Office Visit on 1/8/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 1/8/2020

Problems last reviewed by Lai, Eugene C., MD on 1/8/2020 1538

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 1/8/2020

Allergies last reviewed by Lai, Eugene C., MD on 1/8/2020 1538
No Known Allergies

History as of 1/8/2020

Medical History as of 1/8/2020

Medical last reviewed by Lai, Eugene C., MD on 1/8/2020
None

Surgical History as of 1/8/2020

Surgical last reviewed by Lai, Eugene C., MD on 1/8/2020
None

Family History as of 1/8/2020

Family History as of 1/8/2020

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Substance & Sexuality History as of 1/8/2020

Tobacco Use as of 1/8/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 1/8/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
—	—	Never Used	—	Provider

Alcohol Use as of 1/8/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 1/8/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 1/8/2020

Drug Use last reviewed by Riley, Lillian R, MA on 1/8/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 1/8/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 1/8/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 1/8/2020

Socioeconomic as of 1/8/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 1/8/2020 1538

apixaban (ELIQUIS) 2.5 mg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Instructions: TAKE 1 TABLET TWICE DAILY
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 8/4/2018 — End date: 2/12/2020

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — Informant: Family Member

rivastigmine (EXELON) 9.5 mg/24 hr *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 9.5 mg onto the skin daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 11/11/2019 — End date: 2/12/2020

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 3/13/2019 — Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/1/2019 — End date: 6/1/2021
Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
Authorized by: Lai, Eugene C., MD — Ordered on: 1/8/2020
Start date: 1/8/2020 — End date: 7/14/2020
Quantity: 30 tablet — Refill: 2 refills by 7/6/2020

Stopped in Visit

None

Progress Notes

Progress Notes

Lai, Eugene C., MD at 1/8/2020 1300

Author: Lai, Eugene C., MD
Filed: 1/18/2020 1:17 PM
Status: Signed
Service: —
Encounter Date: 1/8/2020
Editor: Lai, Eugene C., MD (Physician)
Author Type: Physician
Creation Time: 1/18/2020 1:01 PM

INITIAL NEUROLOGICAL CONSULTATION

CHIEF COMPLAINT: Progressive Parkinson's disease symptoms, cognitive decline, [redacted] and sleep disturbance.

HISTORY OF PRESENT ILLNESS: The patient is a 78-year-old, ambidextrous Caucasian-American man, the CEO and Founder of Reynolds Computer Software Company, who presents with progressive Parkinson's disease symptoms, cognitive decline, [redacted] and sleep disturbance. He is kindly referred to me for further neurological consultation by James Pool, M.D. He comes with his wife, Dorothy, for this clinic visit. He has a 3-4 year history of memory decline. He is repeating himself, misplacing personal objects, and losing his train of thought. He has difficulty with multi-tasking, taking medications, spelling, and word-finding. He has difficulty managing his personal finances and he has a bookkeeper. He does not initiate activities as he used to. His wife states that his ability to make decisions fluctuates. He has episodes of blanking or tuning out associated with reduced interactions with his surroundings. He was advised not to drive by his physician, but he is still driving in closeby familiar areas. About 2½ years ago, he started slowing down with imbalance and walking changes. His steps became shorter and he developed a stooped posture. [redacted] bupropion was started which has helped to improve his thinking and memory. He notices improvement with his stiffness after exercise. His handwriting is messier and smaller. He stopped signing employee certificates and he is using a stamp with his signature lately. He has difficulty with fine motor functions. His voice is softer and he has some difficulty swallowing food and medications. He has excessive saliva. He has some difficulty turning in bed. He has had reduced sense of smell for about 10 years. He has been experiencing insomnia for about 10 years. He began snoring, kicking, punching, and acting out his dreams during sleep about 2-3 years ago. He was diagnosed with REM sleep behavior disorder and was prescribed clonazepam that has helped his symptoms. He reports one episode of visual disturbance when he saw a rainbow about 8 years ago, and he was diagnosed with ocular migraine with possible visual aura. He saw Dr. Joseph Jankovic on 01/30/2019 and he was diagnosed with Parkinson's disease. He was started on carbidopa/levodopa 25/100 3 times a day. He had slight improvement in his motor functioning initially, but his motor and mental functioning worsened when he increased the medication to 2 tablets 3 times a day, due to interactions with Cardizem and Vytorin. At present time, he is able to tolerate carbidopa/levodopa 25/100 2 tablets 3 times a day after he stopped the other medications, and he has noticeable improvement in his Parkinson's symptoms. He had a DaTscan of the brain on 2/15/2019 that showed significant loss of dopaminergic signals. On 3/1/2019, he had a neuropsychological evaluation by Dr. Michele York that was consistent with Dementia with Lewy Bodies due to finding of parkinsonism, dementia, new onset visual hallucination, potential visual illusion, and REM sleep behavior disorder. During the testing, he saw a bug on the floor in the room that was not present. He was started on Exelon patch on 3/13/2019 and he feels there is some improvement in his memory. He was also evaluated by Dr. Melissa Yu. He has urinary frequency and urgency. He has hearing loss and numbness in his feet. Otherwise, he denies recent headache, dizziness, vertigo, loss of consciousness, nausea/vomiting, vision or hearing change, focal weakness, and falling. There is no previous history of head trauma or toxic exposure.

PAST MEDICAL HISTORY: He has a history of Parkinson's disease, dementia, ocular migraine, hyperlipidemia, hypothyroidism, paroxysmal atrial fibrillation, pericarditis, [redacted] urinary tract infection, prostatitis, erectile dysfunction, low testosterone, pseudoexfoliation glaucoma, plantar fasciitis, [redacted]

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

PAST SURGICAL HISTORY: He underwent tonsillectomy in 1945, transurethral resection of the prostate in 2006, bilateral cataract surgeries, polypectomy, dental surgery, basal cell carcinoma removal, and melanoma excision.

ALLERGIES: No known drug allergies.
MEDICATIONS: Carbidopa/levodopa 25/100 2 tablets t.i.d.; Eliquis 2.5 mg b.i.d.; levothyroxine 75 mcg daily; rivastigmine patch 9.5 mg daily; bupropion SR 100 mg b.i.d.; trazodone 50 mg q.h.s.; testosterone gel daily; omega 3-dha-epa-fish oil 100-160-1000 mg daily; and levomefolate calcium daily.

[redacted]

SOCIAL HISTORY: He has a Bachelor's degree in Business Administration and attended graduate school for one year in Marketing at the University of Florida. He is the Chairman and CEO of Reynolds Computer Software Company. He is married and lives with his wife. He leads an active lifestyle. He exercises 3 times a week at the Houstonian for 1½ to 2 hours. He never smoked cigarettes. He used to consume alcoholic beverages heavily during fly-fishing trips and he stopped 3-4 years ago due to atrial fibrillation.

REVIEW OF SYSTEM: His sleep is irregular. He wakes early and has difficulty going back to sleep occasionally. He states that in the last 2 days, he had difficulty sleeping from 1 am until 5 am, and then he went to sleep until 10 am. He moves and talks during sleep. His appetite is good and his weight is stable. Otherwise, he denies recent fever, chills, chest pain, shortness of breath, abdominal discomfort, dysuria, skin rash, or joint pain.

PHYSICAL EXAMINATION: Vital Signs: BP = 118/63. P = 36. W = 189 lbs. H = 5' 11.5". BMI = 25.99. General Appearance: This is a well-developed, well-nourished, elderly man in no acute distress. He is pleasant and cooperative. HEENT: Unremarkable. Neck and Back: Supple with full range of motion. There is no tenderness to palpation or deformity. Lymphadenopathy and carotid bruit are not noted. Cardiac: Irregular and bradycardic. Lungs: Clear to auscultation. Abdomen: Soft and nontender. Extremities: Without clubbing, cyanosis or edema. Skin: Without rash or lesion.

NEUROEXAMINATION: Mental Status: He is alert and oriented to person, place, time, and situation. Montreal Cognitive Assessment (MoCA) score is 20/30, missing 2 points with visuospatial/executive function, 2 points with serial 7 subtraction, 1 point with language fluency, and 5 points with delayed recall. Mood and affect are appropriate. Speech is slightly hesitant. Comprehension and expression are slower. Insight and judgment are impaired. Cranial Nerves: II. – Visual fields are intact to confrontation. Fundi appear benign. III., IV., VI. – Pupils are post-surgical. Extraocular muscles are full without nystagmus, ptosis, or diplopia. V. – Sensation is intact in all divisions tested. Temporalis and masseter muscles are full. VII. – Face is symmetrical. VIII. – Hearing is decreased to finger rubs bilaterally, R>L. IX., X. – The palate elevates symmetrically. XI. – Trapezius and sternocleidomastoid muscles are full. XII. – The tongue protrudes in the midline without atrophy or fibrillation. Motor Examination: Strength is symmetrical, 5/5 except in the hip flexors that is 5-/5. Muscle tone is slightly increased bilaterally, L>R. He has no tremor or other abnormal movements. There is no atrophy, contracture, or fasciculation. Sensory Examination: Intact to pinprick and light touch, but decreased to proprioception and vibration in both feet. Coordination: Finger-nose-finger and heel-to-shin are without dysmetria. Rapid alternating movements are slower bilaterally. Reflexes: 1+ and symmetrical. Planter responses are flexor bilaterally. Gait: He is able to arise from his chair without pushing. He walks with a slightly wide-based gait. His bilateral arm swings are decreased. His turning is hesitant. He is able to perform heel and toe walking, but not tandem walking. Posture is stable to the Pull Test but Romberg is positive with body swaying.

PREVIOUS STUDIES: All the medical records from Epic are carefully reviewed. MRI of the brain (11/06/2018) showed no intracranial abnormalities, particularly no disproportionate lobar

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

atrophy. DaTscan of the brain (02/15/2019) showed severe loss of dopaminergic neuronal function in the bilateral dorsal striata with loss greater on the right compared to the left.

IMPRESSION: This 78-year-old man presents with a 3-year history of progressive Parkinson's disease symptoms, cognitive decline, [redacted] and insomnia. His MoCA test score is 20/30. His neurological examination is significant for cognitive deficits, rigidity, bradykinesia, sensory impairment, and unsteadiness. Therefore, his clinical findings are most consistent with the diagnosis of Parkinson's disease with mild to moderate cognitive impairment. Differential diagnoses include: dementia with Lewy bodies, vascular parkinsonism, other secondary parkinsonism, or Parkinson plus syndromes. He has signs of peripheral polyneuropathy with gait imbalance. He also has rapid eye movement (REM) sleep behavior disorder.

PLAN: His neurological condition is discussed thoroughly with the patient and his wife. At this time, I will review his previous neuropsychological evaluation. I will review his laboratory test results from Dr. Pool's office. I will start clonazepam 0.5 mg one tablet at bedtime for his sleep disturbance. The benefits and potential side-effects of the new medication are explained in detail. He will continue trazodone 50 mg at bedtime. He will continue carbidopa/levodopa 25/100 2 tablets 3X/day and rivastigmine patch 9.5 mg daily and his other current medications. He will benefit from physical and occupational therapies, especially LSVT BIG and LOUD programs. He is advised to keep active physically and mentally and exercise regularly. He should avoid stress and anxiety as well as reduce his business responsibilities. Follow-up with Dr. Pool or Cardiology for bradycardia and atrial fibrillation. He or his wife will call if they have any further question or concern. He will return for a follow-up clinic visit in 1 month.

Total initial neurological consultation time = 70 minutes.
More than 50% of visit time is spent in counseling and patient education.

Eugene C. Lai, M.D., Ph.D.
Robert W. Hervey Distinguished Endowed Chair in Parkinson's Disease
Professor of Neurology and Neuroscience
Director, Neurodegenerative Disease Clinic

Stanley H. Appel Department of Neurology
Houston Methodist Neurological Institute &
Weill Cornell Medical School
6560 Fannin, Suite 802
Houston, Texas 77030
TEL. 713-441-0239
FAX. 713-790-5044

Electronically signed by Lai, Eugene C., MD at 1/18/2020 1:17 PM

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

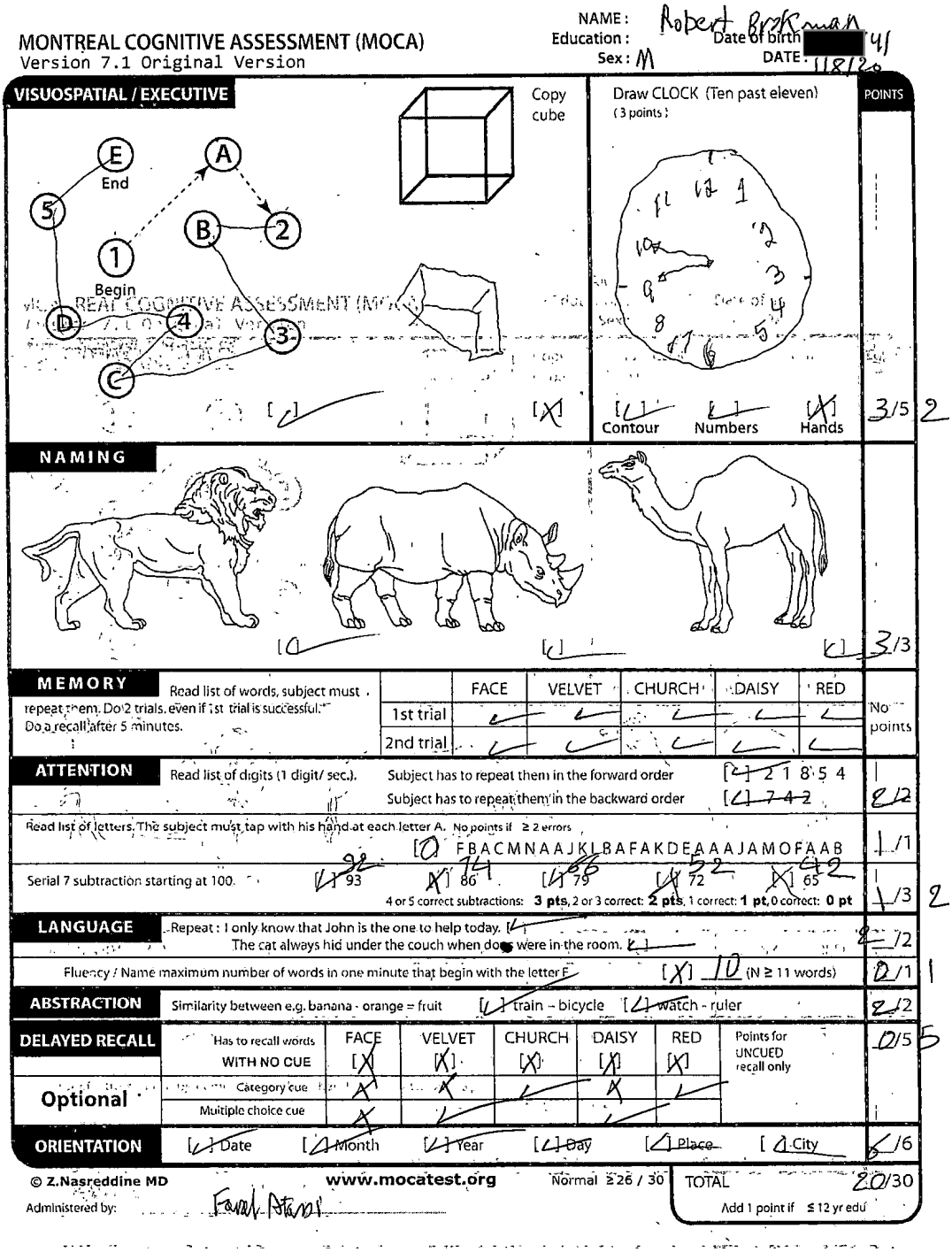
Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 1/8/2020

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Note Scans

Clinic Progress Note - Scan on 1/20/2020 9:04 AM: MoCA test 01/08/2020

Scan (below)



MONTREAL COGNITIVE ASSESSMENT (MOCA)
Version 7.1 Original Version

NAME: Robert Brockman
Education:
Sex: M
Date of birth [redacted]41
DATE: 1/8/20

		POINTS
VISUOSPATIAL / EXECUTIVE	Copy cube; Draw CLOCK (Ten past eleven) (3 points) — Contour, Numbers, Hands	3/5 2
NAMING		3/3
MEMORY	Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.	No points
ATTENTION	Read list of digits (1 digit/ sec.). Subject has to repeat them in the forward order [2 1 8 5 4]. Subject has to repeat them in the backward order [2 4 7]	2/2
	Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors [0] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B	1/1
	Serial 7 subtraction starting at 100. [1] 93 [1] 86 [1] 79 [1] 72 [0] 65 — 4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt	1/3 2
LANGUAGE	Repeat: I only know that John is the one to help today. [1] The cat always hid under the couch when dogs were in the room. [1]	2/2
	Fluency / Name maximum number of words in one minute that begin with the letter F [1] 10 (N ≥ 11 words)	0/1 1
ABSTRACTION	Similarity between e.g. banana - orange = fruit [1] train - bicycle [1] watch - ruler	2/2
DELAYED RECALL	Has to recall words WITH NO CUE: FACE [0], VELVET [0], CHURCH [0], DAISY [0], RED [0]. Points for UNCUED recall only	0/5 5
Optional	Category cue; Multiple choice cue	
ORIENTATION	[1] Date [1] Month [1] Year [1] Day [1] Place [1] City	6/6

© Z.Nasreddine MD www.mocatest.org Normal ≥ 26 / 30 TOTAL 20/30
Add 1 point if ≤ 12 yr edu
Administered by: Farah Ahmed

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted] 941, Sex: M
Visit date: 1/8/2020

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Note Scans (continued)

Clinic Progress Note - Scan on 1/20/2020 9:05 AM: UPDRS test 01/08/2020

Scan (below)

Unified Parkinson's Disease Rating Scale

Name- Robert Brockman | Unit Number

Date 1/8/20

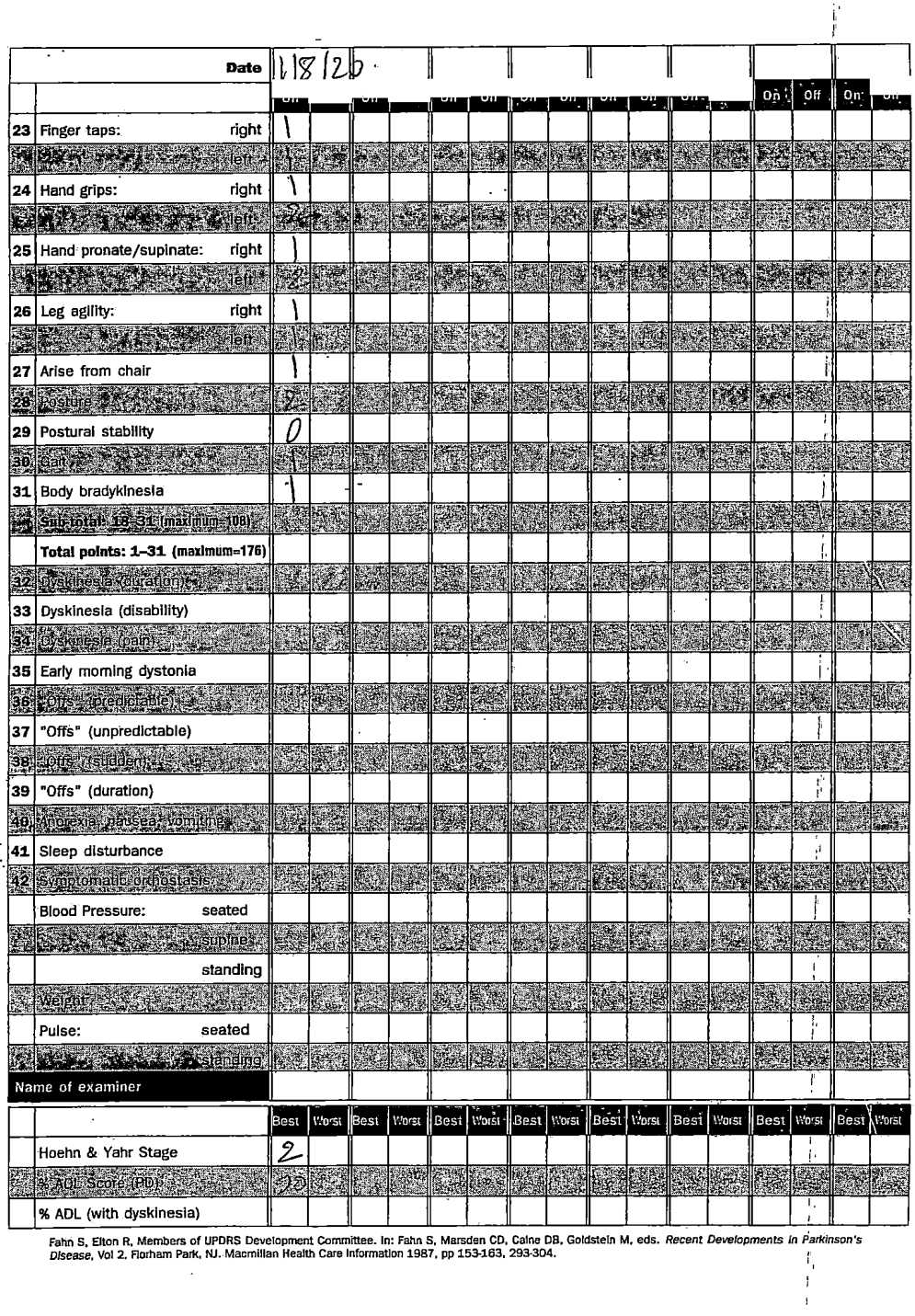
DOPA mg/day | hrs DOPA lasts

		On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off
1	Mentation	2															
2	Thought Disorder	1															
3	Depression	2															
4	Motivation/Initiative	1															
	Subtotal 1–4 (maximum=16)																
5	Speech	2															
6	Salivation	2															
7	Swallowing	2															
8	Handwriting	2															
9	Cutting food	1															
10	Dressing	2															
11	Hygiene	1															
12	Turning in bed	2															
13	Falling	0															
14	Freezing	0															
15	Walking	1															
16	Tremor	0															
17	Sensory symptoms	1															
	Subtotal 5–17 (maximum=52)																
18	Speech	2															
19	Facial expression	1															
20	Tremor at rest: face, lips, chin	0															
	Hands: right	0															
	left	0															
	Feet: right	0															
	left	0															
21	Action tremor: right	0															
	left	0															
22	Rigidity: neck	2															
	Upper extremity: right	1															
	left	1															
	Lower extremity: right	1															
	left	1															

HOUSTON Methodist LEADING MEDICINE
HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Note Scans (continued)



		Date	1/8/20															
			On		On		On	On	On	On	On	On	On	On	On	Off	On	On
23	Finger taps:	right	1															
		left	1															
24	Hand grips:	right	1															
		left	2															
25	Hand pronate/supinate:	right	1															
		left	2															
26	Leg agility:	right	1															
		left	1															
27	Arise from chair		1															
28	Posture		2															
29	Postural stability		0															
30	Gait		1															
31	Body bradykinesia		1															
	Sub-total: 18-31 (maximum=108)																	
	Total points: 1–31 (maximum=176)																	
32	Dyskinesia (duration)																	
33	Dyskinesia (disability)																	
34	Dyskinesia (pain)																	
35	Early morning dystonia																	
36	"Offs" (predictable)																	
37	"Offs" (unpredictable)																	
38	"Offs" (sudden)																	
39	"Offs" (duration)																	
40	Anorexia, nausea, vomiting																	
41	Sleep disturbance																	
42	Symptomatic orthostasis																	
	Blood Pressure:	seated																
		supine																
		standing																
	Weight																	
	Pulse:	seated																
		standing																
	Name of examiner																	
			Best	Worst	Best	Worst	Best	Worst	Best	Worst	Best	Worst	Best	Worst	Best	Worst	Best	Worst
	Hoehn & Yahr Stage		2															
	% ADL Score (PD)		20															
	% ADL (with dyskinesia)																	

Fahn S, Elton R, Members of UPDRS Development Committee. In: Fahn S, Marsden CD, Calne DB, Goldstein M, eds. *Recent Developments in Parkinson's Disease*, Vol 2. Florham Park, NJ. Macmillan Health Care Information 1987, pp 153-163, 293-304.

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

clonAZEPAM (KlonoPIN) 0.5 MG tablet [320668809] (Discontinued)

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Electronically signed by: **Lai, Eugene C., MD on 01/08/20 1536** Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 01/08/20 1536 Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD Ordering mode: Standard
Frequency: Routine Nightly 01/08/20 - 90 days Class: Normal
Discontinued by: Atassi, Farah 07/14/20 1338

Order Details

Order Details

Priority	Expected	Study Status
Routine	1/8/2020 9:00 PM	

Order Details

Frequency	Duration	Priority	Order Class
at bedtime	90 days	Routine	Normal

Order History

Outpatient

Date/Time	Action Taken	User	Additional Information
01/08/20 1536	Sign	Lai, Eugene C., MD	
02/12/20 0818	Taking Flag Checked	Riley, Lillian R, MA	
07/14/20 1214	Reorder	Atassi, Farah	To Order: 335306863
07/14/20 1338	Discontinue	Atassi, Farah	

clonAZEPAM (KlonoPIN) 0.5 MG tablet [320668809] DISCONTINUED

Dose: **0.5 mg** Route: **oral** Frequency: **at bedtime**
Dispense Quantity: 30 tablet Refills: 2

Sig: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Start Date: 01/08/20 End Date: 07/14/20 (ordered for 90 doses)
Discontinued by: Atassi, Farah on 7/14/2020 13:38

Written Date: 01/08/20 Expiration Date: 07/06/20

Providers

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Outpatient Referral

Ambulatory referral to Neurology [9125745] (Active)

Awaiting signature from: **HM HIM ADMINISTRATOR** Status: **Active**

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Mode: Ordering in Verbal with readback mode
This order may be acted on in another encounter.
Ordering user: Garza, Maria 12/27/19 0850
Authorized by: Lai, Eugene C., MD
Frequency: Routine 12/27/19 -
Quantity: 1
Diagnoses
Dementia associated with Parkinson's disease (HCC) [G20, F02.80]

Communicated by: User, Transcribing Order
Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Class: Internal Referral
Instance released by: Choksi, Krupa 1/8/2020 1:01 PM

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No
File referral to ordering clinic?	Keep

Referral Details

Referred By		Referred To	Type	Priority
Pool, James L., MD 1977 Butler Blvd Suite E6.150 HOUSTON TX 77030 Phone: 713-798-0180 Fax: 713-798-0174	Diagnoses: Dementia associated with Parkinson's disease (HCC) Order: Ambulatory Referral To Neurology Reason: Specialty Services Required	**Lai, Eugene C., MD** 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044 Specialty: Neurology	Consultation	Routine

Question	Answer
Let me know if the patient declines service or is unable to be contacted?:	No
File referral to ordering clinic?:	Keep

Indications

Dementia Associated With Parkinson's Disease (Hcc) [G20, F02.80 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	12/27/2019 8:50 AM	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Internal Referral

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
01/08/20 1301	Release	Choksi, Krupa	From Order: 9125744

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Medications - All Orders

Medications - All Orders (continued)

apixaban (ELIQUIS) 2.5 mg tablet [9125746] Patient-reported historical medication

Ordering date: 01/08/20 1311
Ordering mode: Standard
Frequency: Routine 08/04/18 - 02/12/20
Discontinued by: Lai, Eugene C., MD 02/12/20 0904 [Reorder]
Authorized by: Provider, Historical, MD
Class: Historical Med

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet [9125747] Patient-reported historical medication

Ordering date: 01/08/20 1311
Ordering mode: Standard
Frequency: Routine TID 10/09/19 - Until Discontinued
Admin instructions: 2 tablets every morning, 1 tablet every evening
Status
Francia, Loi S 06/01/21 1245 (Admin Instructions edited)
Authorized by: Provider, Historical, MD
Class: Historical Med

carbidopa-levodopa (SINEMET) 25-100 mg per tablet [9125748] Patient-reported historical medication

Ordering date: 01/08/20 1311
Ordering mode: Standard
Frequency: Routine 10/09/19 - 03/12/20
Discontinued by: Lai, Eugene C., MD 03/12/20 1244
Authorized by: Provider, Historical, MD
Class: Historical Med

levothyroxine (SYNTHROID) 75 mcg tablet [9125749] Patient-reported historical medication

Ordering date: 01/08/20 1311
Ordering mode: Standard
Frequency: Routine QAM 10/09/19 - Until Discontinued
Authorized by: Provider, Historical, MD
Class: Historical Med

rivastigmine (EXELON) 9.5 mg/24 hr [9125750] Patient-reported historical medication

Ordering date: 01/08/20 1311
Ordering mode: Standard
Frequency: Routine 11/11/19 - 02/12/20
Discontinued by: Lai, Eugene C., MD 02/12/20 0904 [Reorder]
Authorized by: Provider, Historical, MD
Class: Historical Med

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump [9125751] Patient-reported historical medication

Ordering date: 01/08/20 1311
Ordering mode: Standard
Frequency: Routine Daily - Until Discontinued
Authorized by: Provider, Historical, MD
Class: Historical Med

traZODone (DESYREL) 50 MG tablet [9125752] Patient-reported historical medication

Ordering date: 01/08/20 1311
Ordering mode: Standard
Frequency: Routine Nightly 03/13/19 - Until Discontinued
Authorized by: Provider, Historical, MD
Class: Historical Med

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule [320668807] Patient-reported historical medication

Ordering date: 01/08/20 1311
Ordering mode: Standard
Frequency: Routine Daily - Until Discontinued
Authorized by: Provider, Historical, MD
Class: Historical Med

levomefolate calcium (L-METHYLFOLATE ORAL) [320668808] Patient-reported historical medication

Ordering date: 01/08/20 1314
Ordering mode: Standard
Frequency: Routine Daily 10/01/19 - 06/01/21
Discontinued by: Francia, Loi S 06/01/21 1253
Authorized by: Provider, Historical, MD
Class: Historical Med

clonAZEPAM (KlonoPIN) 0.5 MG tablet [320668809]

Electronically signed by: **Lai, Eugene C., MD on 01/08/20 1536**
Ordering user: Lai, Eugene C., MD 01/08/20 1536
Authorized by: Lai, Eugene C., MD
Frequency: Routine Nightly 01/08/20 - 90 days
Discontinued by: Atassi, Farah 07/14/20 1338
Status: **Discontinued**
Ordering provider: Lai, Eugene C., MD
Ordering mode: Standard
Class: Normal

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals

Vital Signs - Last Recorded

Most recent update: 1/8/2020 1:14 PM by Riley, Lillian R, MA

BP	Pulse	Ht	Wt	BMI
118/63 (BP Location: Left arm, Patient Position: Standing)	**36** !	5' 11.5"	85.7 kg (189 lb)	25.99 kg/m²

Flowsheets

Custom Formula Data

Row Name	01/08/20 1312	01/08/20 1309
Adult IBW/VT Calculations		
IBW/kg (Calculated)	—	76.45 -LR at 01/08/20 1309
Low Range Vt 6mL/kg	—	458.7 mL/kg -LR at 01/08/20 1309
Adult Moderate Range Vt 8mL/kg	—	611.6 mL/kg -LR at 01/08/20 1309
Adult High Range Vt 10mL/kg	—	764.5 mL/kg -LR at 01/08/20 1309
IBW/kg (Calculated) (lbs)	—	168.54 -LR at 01/08/20 1309
OTHER		
BMI (Calculated)	—	26 -LR at 01/08/20 1309
IBW/kg (Calculated) Male	—	76.45 kg -LR at 01/08/20 1309
IBW/kg (Calculated) Female	—	71.95 kg -LR at 01/08/20 1309
BMI	—	26 -LR at 01/08/20 1309
Total Weight Change	—	189 -LR at 01/08/20 1309
Total Weight Change	—	+189 -LR at 01/08/20 1309
Weight Change Since Last Visit	—	189 -LR at 01/08/20 1309
Weight Change Since Last Visit	—	+189 -LR at 01/08/20 1309
Internal Initial Weight - Reference Only	—	0 -LR at 01/08/20 1309
Fluid Needs	—	61980 -LR at 01/08/20 1309
BSA (Calculated - sq m)	—	2.08 sq meters -LR at 01/08/20 1309
MAP (Calculated)	81.33 -LR at 01/08/20 1314	101 -LR at 01/08/20 1309
Body Composition Analysis		
BMI	—	26 -LR at 01/08/20 1309
Dietitian Vitals		
BMI (Calculated)	—	26 -LR at 01/08/20 1309
IBW/kg	—	76.45 -LR at 01/08/20 1309

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

(Calculated)		
IBW/kg (Calculated) Female	—	71.95 kg -LR at 01/08/20 1309
IBW/kg (Calculated) Males	—	76.45 -LR at 01/08/20 1309
Fluid Needs		
Total Fluid Estimated Needs	—	61980 -LR at 01/08/20 1309

Data

Row Name	01/08/20 1312	01/08/20 1309
OTHER		
Change in SBP	-19 -LR at 01/08/20 1314	137 -LR at 01/08/20 1309

Encounter Vitals

Row Name	01/08/20 1312	01/08/20 1309
Enc Vitals		
BP	118/63 -LR at 01/08/20 1314	137/83 -LR at 01/08/20 1309
Pulse	**(!) 36** -LR at 01/08/20 1314	60 -LR at 01/08/20 1309
Weight	—	85.7 kg (189 lb) -LR at 01/08/20 1309
Height	—	5' 11.5" -LR at 01/08/20 1309
Vital Signs		
BP Location	Left arm -LR at 01/08/20 1314	Left arm -LR at 01/08/20 1309
Patient Position	Standing -LR at 01/08/20 1314	Sitting -LR at 01/08/20 1309

Social Determinants

Row Name	01/08/20 13:12:45	01/08/20 13:12:43
Alcohol Use		
How often do you have a drink containing alcohol?	Never Data migrated from History -LR at 03/09/21 0050	Never Data migrated from History -LR at 05/18/21 1428

Vital Signs

Row Name	01/08/20 1401
OTHER	
Stimulants	000 -DH at 01/08/20 1301
Sedatives	000 -DH at 01/08/20 1301
Narcotics	000 -DH at 01/08/20 1301

User Key

(r) = Recorded By, (t) = Taken By, (c) = Cosigned By

Initials	Name	Effective Dates	Provider Type	Discipline

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

DH	Hm Interface, Documentation Incoming	—	—	—
LR	Riley, Lillian R, MA	01/08/20 - 05/17/20	Medical Assistant	—

Patient Instructions

Start clonazepam 0.5 mg 1 tablet at bedtime for sleep.
Continue trazodone 50 mg at bedtime.
Continue present medications.
Keep physically and mentally active. Exercise regularly.

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Patient Instuctions

Patient Instructions History

Patient Instructions Revisions	Status	Date&Time	By User
Start clonazepam 0.5 mg 1 tablet at bedtime for sleep. Continue trazodone 50 mg at bedtime. Continue present medications. Keep physically and mentally active. Exercise regularly.	Addendum	01/08/2020 3:40 PM	LAI, EUGENE
Start clonazepam 0.5 mg 1 tablet at bedtime for sleep. Continue present medications. Keep physically and mentally active. Exercise regularly.	Signed	01/08/2020 3:37 PM	LAI, EUGENE

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary

AFTER VISIT SUMMARY

Robert T. Brockman MRN: 003768603

1/8/2020 1:00 PM HMNI Stanley H Appel Dept of Neurology 713-441-3780

Instructions from Eugene C. Lai, MD

Start clonazepam 0.5 mg 1 tablet at bedtime for sleep.
Continue trazodone 50 mg at bedtime.
Continue present medications.
Keep physically and mentally active. Exercise regularly.

Your medications have changed today

See your updated medication list for details.

Pick up these medications at Briargrove Pharmacy - Houston TX - Houston, TX - 6435 San Felipe

clonAZEPAM
Address: 6435 San Felipe, Houston TX 77057
Phone: 713-783-5704

Return in about 1 month

(around 2/8/2020) for Next scheduled follow up.

What's Next

FEB 12 2020 — ESTABLISHED PATIENT NEURO with Eugene C. Lai, MD
Wednesday February 12 8:00 AM

HMNI Stanley H Appel Dept of Neurology
6560 Fannin Street Suite 802
HOUSTON TX
77030-2725
713-441-3780
Arrive at: Scurlock Tower

Today's Visit

You saw Eugene C. Lai, MD on Wednesday January 8, 2020. The following issues were addressed: Parkinson disease and Dementia associated with Parkinson's disease.

Blood Pressure 118/63	BMI 25.99
Weight 189 lb	Height 5' 11.5"
Pulse 36	

Today's Medication Changes

Accurate as of January 8, 2020 3:43 PM.
If you have any questions, ask your nurse or doctor.

START taking these medications

Robert T. Brockman (MRN: 003768603) • Printed by Janet Zelaya, MA at 1/8/20 3:43 PM Page 1 of 4 Epic

Today's Medication Changes (continued)

START taking these medications (continued)

clonAZEPAM 0.5 MG tablet
Commonly known as: KlonoPIN
Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.

Started by: Eugene C. Lai, MD

Where to Get Your Medications

These medications were sent to Briargrove Pharmacy - Houston TX - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057

Phone: 713-783-5704

☐ clonAZEPAM 0.5 MG tablet

Allergies

No Known Allergies

Preventive Care

Topic	Due
SHINGLES VACCINES (1)	**05/28/1991**
65+ PNEUMOCOCCAL VACCINE (1 of 2 - PCV13)	**05/28/2006**
INFLUENZA VACCINE	**08/01/2019**

Current Health Issues

Dementia associated with Parkinson's disease
Parkinson disease

Patient Care Team

	Relationship	Specialty	Notifications	Start	End
Pool, James L., MD	**PCP - General**	Endocrinology		12/26/19	

Phone: 713-798-0180

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Your Medication List as of January 8, 2020 3:43 PM

ⓘ Always use your most recent med list.

ANDROGEL 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump Generic drug: testosterone	
buPROPion SR 100 MG 12 hr tablet Commonly known as: WELLBUTRIN SR	
carbidopa-levodopa 25-100 mg per tablet Commonly known as: SINEMET	
clonAZEPAM 0.5 MG tablet Commonly known as: KlonoPIN	Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
ELIQUIS 2.5 mg tablet Generic drug: apixaban	
EXELON 9.5 mg/24 hr Generic drug: rivastigmine	
FISH OIL 100-160-1,000 mg capsule Generic drug: omega 3-dha-epa-fish oil	
L-METHYLFOLATE ORAL	
SYNTHROID 75 mcg tablet Generic drug: levothyroxine	
traZODone 50 MG tablet Commonly known as: DESYREL	

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

MyChart Signup

For your convenience, Houston Methodist MyChart allows you to send messages to your doctor's office, view your test results, renew your prescriptions, schedule appointments and more. To sign up, go to HoustonMethodist.org/mychart and click on the **Sign Up Now** button in the "New User?" box. Enter your Houston Methodist MyChart Activation Code exactly as it appears below. You will not need this code once you have completed the sign-up process. This code will expire 90 days from the date of this After Visit Summary.

Houston Methodist MyChart Activation Code: MVQMB-B46P2-KR6RX
Expires: 2/10/2020 9:07 AM

If you have questions, please call 832.667.5694 to speak with our Houston Methodist Customer Service Team. Remember, do not use Houston Methodist MyChart if you have an urgent need or request. For medical emergencies, dial **911**.

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary (continued)

Visit Information

Date & Time	Provider	Department	Encounter #
1/8/2020 1:00 PM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100073097942

Coding Summary for this Encounter

Code	Description	Service Date	Service Provider	Qty
99205	PR OFFICE OUTPATIENT NEW 60 MINUTES	1/8/2020	Lai, Eugene C., MD	1
	Dx: Parkinson's disease [G20], Dementia in other diseases classified elsewhere without behavioral disturbance [F02.80]			

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Referral

Consultation #5045958 *[last edited by Referral, End Of Day on 12/28/2020 0529]*

Reason: Specialty Services Required
Class: Incoming
Status updated on: 12/28/2020
Priority: Routine
Status: Closed - Expired-Auto Closed
Valid dates: From 12/27/2019 to 12/27/2020

Referred From

Provider: Pool, James L., MD
Provider phone: 713-798-0180
Provider address: 1977 Butler Blvd Suite E6.150 HOUSTON TX 77030

Referred To

Specialty: Neurology
Provider phone: 713-441-0239
Provider: Lai, Eugene C., MD
Provider address: 6560 FANNIN ST SUITE 802 HOUSTON TX 77030

Visits

Requested: 1
Authorized: 1
Completed: 0
Scheduled: 1

Procedures

Ambulatory referral to Neurology

Provider: Lai, Eugene C., MD
Number requested: 1
Number approved: 1

Diagnoses

- 332.0, 294.10 (ICD-9-CM) - G20, F02.80 (ICD-10-CM) - Dementia associated with Parkinson's disease (HCC)

Order

Ambulatory referral to Neurology [9125744]

Awaiting signature from: **HM HIM ADMINISTRATOR**
Status: **Active**
Mode: Ordering in Verbal with readback mode
Communicated by: User, Transcribing Order
Ordering user: Garza, Maria 12/27/19 0850
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordered during: Transcribe Orders on 12/27/2019
Diagnoses
Dementia associated with Parkinson's disease (HCC) [G20, F02.80]

Triage

Triage Information

Decision: None
Schedule by date: 1/26/2020

Coverages

01/08/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Referral (continued)

Cigna

Plan: Cigna Open Access/Network	Covered: Covered	From: 1/1/2008	Member #: U3212210001

End of Report

Gov. Ex. 157

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted] 941, Sex: M
Visit date: 2/12/2020

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider

Atassi, Farah

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of Neurology	6560 Fannin Street Suite 802 Houston TX 77030-2725	713-441-3780	713-790-5079

Research Study Linked to Orders Only on 2/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 2/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907
No Known Allergies

History as of 2/12/2020

Medical History as of 2/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Surgical History as of 2/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

GOVERNMENT EXHIBIT
4:21-CR-009-GCH
No. 157

Family History as of 2/12/2020

Family History as of 2/12/2020

Substance & Sexuality History as of 2/12/2020

Tobacco Use as of 2/12/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—
Types	**Comments**	**Smokeless Tobacco**	**Smokeless**	**Source**

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

		Status	Tobacco Quit Date	
—	—	Never Used	—	Provider

Alcohol Use as of 2/12/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 2/12/2020

Drug Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 2/12/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 2/12/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 2/12/2020

Occupational as of 2/12/2020

Occupational last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Socioeconomic as of 2/12/2020

Socioeconomic last reviewed by Riley, Lillian R, MA on 2/12/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Social Documentation History as of 2/12/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 3/13/2019
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021
Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
Authorized by: Lai, Eugene C., MD
Ordered on: 1/8/2020
Start date: 1/8/2020
End date: 7/14/2020
Quantity: 30 tablet
Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.
Authorized by: Lai, Eugene C., MD
Ordered on: 2/12/2020
Start date: 2/12/2020
End date: 7/14/2020
Quantity: 180 tablet
Refill: 3 refills by 2/11/2021

rivastigmine (EXELON) 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.
Authorized by: Lai, Eugene C., MD
Ordered on: 2/12/2020
Start date: 2/12/2020
End date: 6/12/2020
Quantity: 90 patch
Refill: 3 refills by 2/11/2021

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Stopped in Visit

None

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Outpatient Referral

Ambulatory referral to Occupational Therapy [320668816] (Active)

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 1659** Status: **Active**
Mode: Ordering in Verbal with readback mode
Ordering user: Atassi, Farah 02/12/20 1406
Authorized by: Lai, Eugene C., MD
Frequency: Routine 02/12/20 -
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]
Communicated by: Atassi, Farah
Ordering provider: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Class: Outgoing Referral

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD occupational therapy 3 times a week for 8 weeks

Referral Details

Referred By		Referred To	Type	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Order: Ambulatory Referral To Occupational Therapy Reason: Specialty Services Required	**TIRR Memorial Hermann Memorial City OP Rehab POS** 929B N Gessner Rd 108 Houston TX 77024-2659 Phone: 713-797-5942 Specialty: Occupational Therapy	Occupational Therapy	Routine

Comment: LSVT BIG and LOUD occupational therapy 3 times a week for 8 weeks

Question	Answer
Let me know if the patient declines service or is unable to be contacted?:	No

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History Outpatient

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Date/Time	Action Taken	User	Additional Information
02/12/20 1406	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/12/20 1659	Verbal Cosign	Lai, Eugene C., MD	

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Ambulatory referral to Physical Therapy [320668815] (Active)

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 1659**
Status: **Active**
Mode: Ordering in Verbal with readback mode
Communicated by: Atassi, Farah
Ordering user: Atassi, Farah 02/12/20 1406
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Frequency: Routine 02/12/20 -
Class: Outgoing Referral
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Services Requested	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Referral Details

Referred By		Referred To	Type	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Order: Ambulatory Referral To Physical Therapy Reason: Specialty Services Required	**TIRR Memorial Hermann Memorial City OP Rehab POS** 929B N Gessner Rd 108 Houston TX 77024-2659 Phone: 713-797-5942 Specialty: Physical Therapy	Physical Therapy	Routine

Comment: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Question	Answer
Services Requested:	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?:	No

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History

Outpatient

Date/Time	Action Taken	User	Additional Information
02/12/20 1406	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/12/20 1659	Verbal Cosign	Lai, Eugene C., MD	

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

Ambulatory referral to Speech Therapy [320668817] (Active)

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 1659**
Status: **Active**
Mode: Ordering in Verbal with readback mode
Communicated by: Atassi, Farah
Ordering user: Atassi, Farah 02/12/20 1406
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Frequency: Routine 02/12/20 -
Class: Outgoing Referral
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Referral Details

Referred By		Referred To	Type	Priority
Lai, Eugene C., MD 6560 FANNIN ST SUITE 802 HOUSTON TX 77030 Phone: 713-441-0239 Fax: 713-790-5044	Diagnoses: Parkinson's disease (HCC) Order: Ambulatory Referral To Speech Therapy Reason: Specialty Services Required	**TIRR Memorial Hermann Memorial City OP Rehab POS** 929B N Gessner Rd 108 Houston TX 77024-2659 Phone: 713-797-5942 Specialty: Speech Pathology	Speech Pathology	Routine

Comment: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Question	Answer
Let me know if the patient declines service or is unable to be contacted?:	No

Indications

Parkinson's disease (HCC) [G20 (ICD-10-CM)]

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020	

Order Details

Frequency	Duration	Priority	Order Class
None	None	Routine	Outgoing Referral

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/12/20 1406	Sign	Atassi, Farah	Ordering Mode: Verbal with readback
02/12/20 1659	Verbal Cosign	Lai, Eugene C., MD	

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Outpatient Referral - All Orders

Ambulatory referral to Physical Therapy [320668815]

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 1659**
Status: **Active**
Mode: Ordering in Verbal with readback mode
Communicated by: Atassi, Farah
Ordering user: Atassi, Farah 02/12/20 1406
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Frequency: Routine 02/12/20 -
Class: Outgoing Referral
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Services Requested	Evaluate and Treat
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

Ambulatory referral to Occupational Therapy [320668816]

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 1659**
Status: **Active**
Mode: Ordering in Verbal with readback mode
Communicated by: Atassi, Farah
Ordering user: Atassi, Farah 02/12/20 1406
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Frequency: Routine 02/12/20 -
Class: Outgoing Referral
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD occupational therapy 3 times a week for 8 weeks

Ambulatory referral to Speech Therapy [320668817]

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 1659**
Status: **Active**
Mode: Ordering in Verbal with readback mode
Communicated by: Atassi, Farah
Ordering user: Atassi, Farah 02/12/20 1406
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Verbal with readback
Frequency: Routine 02/12/20 -
Class: Outgoing Referral
Quantity: 1
Diagnoses
Parkinson's disease (HCC) [G20]

Questionnaire

Question	Answer
Let me know if the patient declines service or is unable to be contacted?	No

Order comments: LSVT BIG and LOUD physical therapy 3 times a week for 8 weeks

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/12/2020

02/12/2020 - Orders Only in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

Visit Information

Date & Time	Provider	Department	Encounter #
2/12/2020 1:39 PM	Atassi, Farah	HMNI Stanley H Appel Dept of Neurology	2100074995304

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider	Authorizing Provider	Referring Provider
Lai, Eugene C., MD	Lai, Eugene C., MD	Pool, James L., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of Neurology	6560 Fannin Street Suite 802 Houston TX 77030-2725	713-441-3780	713-790-5079

Follow-up and Dispositions

- Return in about 2 months (around 4/12/2020) for Next scheduled follow up.

Level of Service

Level of Service
PR OFFICE OUTPATIENT VISIT 25 MINUTES

Research Study Linked to Office Visit on 2/12/2020

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/12/2020

Problems last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 2/12/2020

Allergies last reviewed by Lai, Eugene C., MD on 2/12/2020 0907
No Known Allergies

History as of 2/12/2020

Medical History as of 2/12/2020

Medical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Surgical History as of 2/12/2020

Surgical last reviewed by Lai, Eugene C., MD on 2/12/2020
None

Family History as of 2/12/2020

Family History as of 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Substance & Sexuality History as of 2/12/2020

Tobacco Use as of 2/12/2020

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/12/2020

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
—	—	Never Used	—	Provider

Alcohol Use as of 2/12/2020

Alcohol Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 2/12/2020

Drug Use last reviewed by Riley, Lillian R, MA on 2/12/2020

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 2/12/2020

Sexual Activity last reviewed by Riley, Lillian R, MA on 2/12/2020

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 2/12/2020

Occupational as of 2/12/2020

Occupational last reviewed by Riley, Lillian R, MA on 2/12/2020
None

Socioeconomic as of 2/12/2020

Socioeconomic last reviewed by Riley, Lillian R, MA on 2/12/2020

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Social Documentation History as of 2/12/2020

Social Documentation last reviewed by Riley, Lillian R, MA on 2/12/2020
None

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Medication List

Medication List

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/12/2020 0907

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — Informant: Family Member

carbidopa-levodopa (SINEMET) 25-100 mg per tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — End date: 3/12/2020

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/9/2019 — Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 3/13/2019 — Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA — Entered on: 1/8/2020
Start date: 10/1/2019 — End date: 6/1/2021
Informant: Family Member

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Instructions: Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
Authorized by: Lai, Eugene C., MD — Ordered on: 1/8/2020
Start date: 1/8/2020 — End date: 7/14/2020
Quantity: 30 tablet — Refill: 2 refills by 7/6/2020

apixaban (ELIQUIS) 2.5 mg tablet

Instructions: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.
Authorized by: Lai, Eugene C., MD — Ordered on: 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

Start date: 2/12/2020
Quantity: 180 tablet

End date: 7/14/2020
Refill: 3 refills by 2/11/2021

rivastigmine (EXELON) 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.
Authorized by: Lai, Eugene C., MD
Start date: 2/12/2020
Quantity: 90 patch

Ordered on: 2/12/2020
End date: 6/12/2020
Refill: 3 refills by 2/11/2021

Stopped in Visit

None

Progress Notes

Progress Notes

Lai, Eugene C., MD at 2/12/2020 0800

Author: Lai, Eugene C., MD
Filed: 2/21/2020 8:42 PM
Status: Signed

Service: —
Encounter Date: 2/12/2020
Editor: Lai, Eugene C., MD (Physician)

Author Type: Physician
Creation Time: 2/12/2020 8:16 AM

NEUROLOGY FOLLOW-UP CLINIC VISIT

78-year-old ambidextrous man with a history of Parkinson's disease, mild cognitive impairment, REM sleep behavior disorder, ocular migraine, hyperlipidemia, hypothyroidism, atrial fibrillation, [redacted] Glaucoma, melanoma, [redacted]

He comes with his wife, Dorothy, for follow-up of his Parkinson's disease. Last visit was on 1/8/2020. He reports physically stable. Sleep is better with trazodone and clonazepam. Appetite is good. Basic activities of daily living are independent. Gait and balance are mildly unsteady. He has no recent fall. Moods are stressed [redacted] He is still working full time as CEO of his software company. His wife needs to help him in the office these days. Memory is impaired but stable. He exercises regularly 3X/week in the Houstonian.

There is no new neurological complaint. His slowness and stiffness are under adequate control with carbidopa/levodopa 25/100 2 tablets 3X/day. He denies recent headache, dizziness, pain, weakness, confusion, dysarthria, dysphagia.

MEDICATIONS:	Sig
• apixaban (ELIQUIS) 2.5 mg tablet	TAKE 1 TABLET TWICE DAILY
• buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet	Take two tablets every morning and one every evening to control depression
• carbidopa-levodopa (SINEMET) 25-100 mg per tablet	TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
• clonAZEPAM (KlonoPIN) 0.5 MG tablet	Take 1 tablet (0.5 mg total) by mouth nightly.
• levomefolate calcium (L-METHYLFOLATE ORAL)	Take one tablet by mouth daily to lower homocysteine
• levothyroxine (SYNTHROID) 75 mcg tablet	Take one tablet every morning for hypothyroidism

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

• omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule	Take by mouth.
• rivastigmine (EXELON) 9.5 mg/24 hr	Place 9.5 mg onto the skin daily.
• testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump	Place on the skin.
• traZODone (DESYREL) 50 MG tablet	Take 50 mg by mouth.

REVIEW OF SYSTEMS:
Constitutional: Negative for easy fatigue, lack of energy. Weight gain of about 4 lbs. since last visit.
Eyes: Positive for visual disturbance due to glaucoma.
ENT: Positive for hearing loss. No nose bleed, sore throat.
Respiratory: Negative for cough and shortness of breath.
Cardiovascular: Negative for chest pain, palpitation, leg swelling.
Gastrointestinal: Positive for mild constipation. No diarrhea, abdominal pain.
Genitourinary: Positive for nocturia, frequency, urgency. No dysuria.
Musculoskeletal: Negative for joint pain, joint swelling, muscle pain.
Skin: Negative for rash, lesion.
Hematological: Negative for bruising, bleeding, adenopathy.
Allergy/Immunology: Negative for allergy symptoms.
Psychiatric/Behavioral: [redacted] No agitation.
Neurological: See above.

FAMILY/SOCIAL HISTORY: Lives with wife. No cigarettes and rare alcohol.

EXAMINATION:
Vitals:

	02/12/20 0817	02/12/20 0820
BP:	132/67	129/80
BP Location:	Left arm	Left arm
Patient Position:	Sitting	Standing
Pulse:	78	75
Weight:	87.5 kg (193 lb)	
Height:	6' 0.5"	

General: Well developed and well nourished elderly man in no acute distress. He is subdued but pleasant and cooperative.
Physical: Head and face are normal. No pain or tenderness to palpation. No edema or rash. Mild hypomimia and hypophonia.
Neurological:
MS: He is alert and attentive. O x person, place, and time. He follows complex verbal commands. Memory is 5/5 immediate -> 0/5 delayed. Comprehension and expression are slower. Insight and judgment are mildly impaired. MoCA score (1/8/2020) = 20/30.
CN: II-XII symmetrical and adequate except bilateral hearing loss. EOM full and tongue is midline.
Motor: Strength is 5/5 and symmetrical except bilateral hip flexors, 5-/5. No tremor and mild rigidity in limbs.
Sensory: Decreased to vibration in both feet.
Coordination: F->N->F without dysmetria. Rapid alternating movements are slower bilaterally.
Gait: He arises from sitting without assistance. He walks with a slightly wide-based gait. Decreased arm swings and

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

hesitant in turning without assistance. He can perform heel, toe walking but not tandem walking.

	VISIT DIAGNOSES:	ICD-10-CM
1.	**Parkinson's disease (HCC)**	**G20**
2.	Mild cognitive impairment	G31.84
3.	[redacted]	
4.	Idiopathic peripheral neuropathy	G60.9

IMPRESSION:
Significant for: Clinical findings are consistent with Parkinson's disease with mild cognitive impairment.
He is under a lot of stress trying to still run his company by himself, and his wife is also stressed out.
He has signs of mild cognitive impairment and peripheral neuropathy with gait imbalance.
Neurological and cognitive examinations are without notable change from last visit.
Physical examination is stable.

PLANS:
Patient's neurologic condition is discussed with him and his wife.
He agrees to reduce his company responsibilities and work hours to decrease his stress.
He will benefit from physical and occupational therapies at TIRR Memorial city. Prescription will be sent.
Continue carbidopa/levodopa 25/100 2 tablets 3X/day for Parkinson symptoms.
Continue rivastigmine patch 9.5/24h for cognitive stabilization.
Continue trazodone 50 mg and clonazepam 0.5 mg at bedtime for sleep and RBD.
Continue bupropion 100 mg 2 tablets in the morning and 1 tablet at bedtime for mood stabilization.
Continue other present medications.
Keep physically and mentally active. Exercise regularly.
Return to clinic in 2 months.

Total Clinic Visit Time: 30 minutes.

PATIENT EDUCATION:
[x] Patient [x] Significant other(s)
Topic:
Disease specific issues [x]
Medications [x]
Medication Side effects [x]
Tests [x]
Treatment/follow-up plans [x]
Consults [ ]
Surgical plan [ ]
Teaching Method: Discussion [x] Handouts [ ]
Patient/family Response: Verbalize understanding and agree(s) with treatment plans [x]

Today I spent 20 minutes of visit time on counseling and patient education.

Eugene C. Lai, M.D., Ph.D.
Robert W. Hervey Distinguished Endowed Chair in Parkinson's Disease
Professor of Neurology and Neuroscience

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

Director, Neurodegenerative Disease Clinic

Stanley H. Appel Department of Neurology
Houston Methodist Neurological Institute &
Weill Cornell Medical School
6560 Fannin, Suite 802
Houston, Texas 77030
TEL. 713-441-0239
FAX. 713-790-5044

Electronically signed by Lai, Eugene C., MD at 2/21/2020 8:42 PM

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders

Medications

apixaban (ELIQUIS) 2.5 mg tablet [320668813] (Discontinued)

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 0904**
Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 02/12/20 0904
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Standard
Frequency: Routine BID 02/12/20 - 365 days
Class: Normal
Discontinued by: Atassi, Farah 07/14/20 1338
Reordered from: apixaban (ELIQUIS) 2.5 mg tablet

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/12/2020 9:00 PM	

Order Details

Frequency	Duration	Priority	Order Class
2 times daily	365 days	Routine	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/12/20 0904	Sign	Lai, Eugene C., MD	Reorder from Order: 9125746
02/12/20 0904	Taking Flag Checked	Lai, Eugene C., MD	
07/14/20 1210	Reorder	Atassi, Farah	To Order: 335306862
07/14/20 1338	Discontinue	Atassi, Farah	

apixaban (ELIQUIS) 2.5 mg tablet [320668813] DISCONTINUED

Dose: **2.5 mg**
Route: **oral**
Frequency: **2 times daily**
Dispense Quantity: 180 tablet
Refills: 3

Sig: Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.

Start Date: 02/12/20
End Date: 07/14/20 (ordered for 730 doses)
Discontinued by: Atassi, Farah on 7/14/2020 13:38

Written Date: 02/12/20
Expiration Date: 02/11/21
Original Order: apixaban (ELIQUIS) 2.5 mg tablet [9125746]

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Providers

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

rivastigmine (EXELON) 9.5 mg/24 hr [320668814] (Discontinued)

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 0904**
Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 02/12/20 0904
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Standard
Frequency: Routine Daily 02/12/20 - 365 days
Class: Normal
Discontinued by: Lai, Eugene C., MD 06/12/20 1626
Reordered from: rivastigmine (EXELON) 9.5 mg/24 hr

Order Details

Order Details

Priority	Expected	Study Status
Routine	2/13/2020 9:00 AM	

Order Details

Frequency	Duration	Priority	Order Class
daily	365 days	Routine	Normal

Order History Outpatient

Date/Time	Action Taken	User	Additional Information
02/12/20 0904	Sign	Lai, Eugene C., MD	Reorder from Order: 9125750
02/12/20 0904	Taking Flag Checked	Lai, Eugene C., MD	
06/12/20 1558	Reorder	Lai, Eugene C., MD	To Order: 335306861
06/12/20 1626	Discontinue	Lai, Eugene C., MD	

rivastigmine (EXELON) 9.5 mg/24 hr [320668814] DISCONTINUED

Dose: **1 patch** Route: **transdermal** Frequency: **daily**
Dispense Quantity: 90 patch Refills: 3

Sig: Place 1 patch on the skin daily.

Start Date: 02/12/20 End Date: 06/12/20 (ordered for 365 doses)
Discontinued by: Lai, Eugene C., MD on 6/12/2020 16:26

Written Date: 02/12/20 Expiration Date: 02/11/21
Original Order: rivastigmine (EXELON) 9.5 mg/24 hr [9125750]
Providers

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Other Orders (continued)

Ordering Provider and Authorizing Provider:
Lai, Eugene C., MD
6560 FANNIN ST SUITE 802, HOUSTON TX 77030
Phone: 713-441-0239 Fax: 713-790-5044
NPI: 1790871002

Ordering User: Lai, Eugene C., MD

Pharmacy

Briargrove Pharmacy - Houston, TX - 6435 San Felipe
6435 San Felipe, Houston TX 77057
Phone: 713-783-5704 Fax: 713-783-5482

Pharmacist Clinical Review History

This prescription has not been clinically reviewed.

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Medications - All Orders

apixaban (ELIQUIS) 2.5 mg tablet [320668813]

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 0904**
Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 02/12/20 0904
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Standard
Frequency: Routine BID 02/12/20 - 365 days
Class: Normal
Discontinued by: Atassi, Farah 07/14/20 1338
Reordered from: apixaban (ELIQUIS) 2.5 mg tablet [9125746]

rivastigmine (EXELON) 9.5 mg/24 hr [320668814]

Electronically signed by: **Lai, Eugene C., MD on 02/12/20 0904**
Status: **Discontinued**
Ordering user: Lai, Eugene C., MD 02/12/20 0904
Ordering provider: Lai, Eugene C., MD
Authorized by: Lai, Eugene C., MD
Ordering mode: Standard
Frequency: Routine Daily 02/12/20 - 365 days
Class: Normal
Discontinued by: Lai, Eugene C., MD 06/12/20 1626
Reordered from: rivastigmine (EXELON) 9.5 mg/24 hr [9125750]

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals

Vital Signs - Last Recorded

Most recent update: 2/12/2020 8:21 AM by Riley, Lillian R, MA

BP	Pulse	Ht	Wt	BMI
129/80 (BP Location: Left arm, Patient Position: Standing)	75	6' 0.5"	87.5 kg (193 lb)	25.82 kg/m²

Flowsheets

HOUSTON Methodist LEADING MEDICINE
HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted] 941, Sex: M
Visit date: 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

Custom Formula Data

Row Name	02/12/20 0820	02/12/20 0817
Adult IBW/VT Calculations		
IBW/kg (Calculated)	—	78.75 -LR at 02/12/20 0818
Low Range Vt 6mL/kg	—	472.5 mL/kg -LR at 02/12/20 0818
Adult Moderate Range Vt 8mL/kg	—	630 mL/kg -LR at 02/12/20 0818
Adult High Range Vt 10mL/kg	—	787.5 mL/kg -LR at 02/12/20 0818
IBW/kg (Calculated) (lbs)	—	173.61 -LR at 02/12/20 0818
OTHER		
BMI (Calculated)	—	25.8 -LR at 02/12/20 0818
IBW/kg (Calculated) Male	—	78.75 kg -LR at 02/12/20 0818
IBW/kg (Calculated) Female	—	74.25 kg -LR at 02/12/20 0818
BMI	—	25.8 -LR at 02/12/20 0818
Total Weight Change	—	193 -LR at 02/12/20 0818
Total Weight Change	—	+193 -LR at 02/12/20 0818
Weight Change Since Last Visit	—	4 -LR at 02/12/20 0818
Weight Change Since Last Visit	—	+4 -LR at 02/12/20 0818
Internal Initial Weight - Reference Only	—	0 -LR at 02/12/20 0818
Fluid Needs	—	63260 -LR at 02/12/20 0818
BSA (Calculated - sq m)	—	2.11 sq meters -LR at 02/12/20 0818
MAP (Calculated)	96.33 -LR at 02/12/20 0821	88.67 -LR at 02/12/20 0819
Body Composition Analysis		
BMI	—	25.8 -LR at 02/12/20 0818
Dietitian Vitals		
BMI (Calculated)	—	25.8 -LR at 02/12/20 0818
IBW/kg (Calculated)	—	78.75 -LR at 02/12/20 0818
IBW/kg (Calculated) Female	—	74.25 kg -LR at 02/12/20 0818
IBW/kg (Calculated) Males	—	78.75 -LR at 02/12/20 0818
Fluid Needs		
Total Fluid Estimated Needs	—	63260 -LR at 02/12/20 0818

HOUSTON Methodist LEADING MEDICINE
HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

Data

Row Name	02/12/20 0820	02/12/20 0817
OTHER		
Change in SBP	-3 -LR at 02/12/20 0821	132 -LR at 02/12/20 0819

Encounter Vitals

Row Name	02/12/20 0820	02/12/20 0817
Enc Vitals		
BP	129/80 -LR at 02/12/20 0821	132/67 -LR at 02/12/20 0819
Pulse	75 -LR at 02/12/20 0821	78 -LR at 02/12/20 0819
Weight	—	87.5 kg (193 lb) -LR at 02/12/20 0818
Height	—	6' 0.5" -LR at 02/12/20 0818
Vital Signs		
BP Location	Left arm -LR at 02/12/20 0821	Left arm -LR at 02/12/20 0819
Patient Position	Standing -LR at 02/12/20 0821	Sitting -LR at 02/12/20 0819

Social Determinants

Row Name	02/12/20 08:18:38
Alcohol Use	
How often do you have a drink containing alcohol?	Never Data migrated from History -LR at 05/18/21 1428

Vital Signs

Row Name	02/12/20 0913
OTHER	
Stimulants	000 -DH at 02/12/20 0813
Sedatives	160 -DH at 02/12/20 0813
Narcotics	080 -DH at 02/12/20 0813

User Key

(r) = Recorded By, (t) = Taken By, (c) = Cosigned By

Initials	Name	Effective Dates	Provider Type	Discipline
DH	Hm Interface, Documentation Incoming	—	—	—
LR	Riley, Lillian R, MA	01/08/20 - 05/17/20	Medical Assistant	—

Patient Instructions

Will benefit from physical and occupational therapies at TIRR Memorial city.
Continue present medications.
Keep physically and mentally active. Exercise regularly.

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient Instructions (continued)

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Patient Instuctions

Patient Instructions History

Patient Instructions Revisions	Status	Date&Time	By User
Will benefit from physical and occupational therapies at TIRR Memorial city. Continue present medications. Keep physically and mentally active. Exercise regularly.	Addendum	02/21/2020 7:29 PM	LAI, EUGENE
Will benefit from physical and occupational therapies at YIRR Memorial city. Continue present medications. Keep physically and mentally active. Exercise regularly.	Addendum	02/12/2020 9:08 AM	LAI, EUGENE
Continue present medications. Keep physically and mentally active. Exercise regularly.	Signed	02/12/2020 8:33 AM	LAI, EUGENE

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary

AFTER VISIT SUMMARY

Robert T. Brockman MRN: 003768603

2/12/2020 8:00 AM HMNI Stanley H Appel Dept of Neurology 713-441-3780

Instructions from Eugene C. Lai, MD

Will benefit from physical and occupational therapies at YIRR Memorial city.
Continue present medications.
Keep physically and mentally active. Exercise regularly.

Your medications have changed today
See your updated medication list for details.

Pick up these medications at Briargrove Pharmacy - Houston TX - Houston, TX - 6435 San Felipe
apixaban • rivastigmine
Address: 6435 San Felipe, Houston TX 77057
Phone: 713-783-5704

Return in about 2 months
(around 4/12/2020) for Next scheduled follow up.

What's Next

You currently have no upcoming appointments scheduled.

Today's Visit

You saw Eugene C. Lai, MD on Wednesday February 12, 2020. The following issues were addressed: Parkinson disease and Mild cognitive impairment.

Blood Pressure 129/80	BMI 25.82
Weight 193 lb	Height 6' 0.5"
Pulse 75	

Today's Medication Changes

Accurate as of February 12, 2020 9:52 AM.
If you have any questions, ask your nurse or doctor.

CHANGE how you take these medications

rivastigmine 9.5 mg/24 hr
Commonly known as: EXELON
Place 1 patch on the skin daily.
What changed: **See the new instructions.**

Changed by: Eugene C. Lai, MD

Today's Medication Changes (continued)

Where to Get Your Medications

These medications were sent to Briargrove Pharmacy - Houston TX - Houston, TX - 6435 San Felipe

6435 San Felipe, Houston TX 77057

Phone: 713-783-5704

- ☐ apixaban 2.5 mg tablet
- ☐ rivastigmine 9.5 mg/24 hr

Allergies

No Known Allergies

Preventive Care

Topic	Due
SHINGLES VACCINES (1)	**05/28/1991**

Current Health Issues

Dementia associated with Parkinson's disease
Parkinson disease

Patient Care Team

	Relationship	Specialty	Notifications	Start	End
Pool, James L., MD	**PCP - General**	Endocrinology		12/26/19	

Phone: 713-798-0180

MyChart Signup

For your convenience, Houston Methodist MyChart allows you to send messages to your doctor's office, view your test results, renew your prescriptions, schedule appointments and more. To sign up, go to HoustonMethodist.org/mychart and click on the **Sign Up Now** button in the "New User?" box. Enter your Houston Methodist MyChart Activation Code exactly as it appears below. You will not need this code once you have completed the sign-up process. This code will expire 90 days from the date of this After Visit Summary.

Houston Methodist MyChart Activation Code: QKXX4-7Z7B4-VV2WC
Expires: 3/28/2020 9:52 AM

If you have questions, please call 832.667.5694 to speak with our Houston Methodist Customer Service Team. Remember, do not use Houston Methodist MyChart if you have an urgent need or request. For medical emergencies, dial **911**.

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Your Medication List as of February 12, 2020 9:52 AM

ⓘ Always use your most recent med list.

AndroGeL 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump Generic drug: testosterone	
apixaban 2.5 mg tablet Commonly known as: ELIQUIS	Take 1 tablet (2.5 mg total) by mouth 2 (two) times a day.
buPROPion SR 100 MG 12 hr tablet Commonly known as: WELLBUTRIN SR	
carbidopa-levodopa 25-100 mg per tablet Commonly known as: SINEMET	
clonAZEPAM 0.5 MG tablet Commonly known as: KlonoPIN	Take 1 tablet (0.5 mg total) by mouth nightly for 90 days.
FISH OIL 100-160-1,000 mg capsule Generic drug: omega 3-dha-epa-fish oil	
L-METHYLFOLATE ORAL	
rivastigmine 9.5 mg/24 hr Commonly known as: EXELON	Place 1 patch on the skin daily.
SYNTHROID 75 mcg tablet Generic drug: levothyroxine	
traZODone 50 MG tablet Commonly known as: DESYREL	

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/12/2020

02/12/2020 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary (continued)

Visit Information

Date & Time	Provider	Department	Encounter #
2/12/2020 8:00 AM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100073526625

Coding Summary for this Encounter

Code	Description	Service Date	Service Provider	Qty
99214	PR OFFICE OUTPATIENT VISIT 25 MINUTES	2/12/2020	Lai, Eugene C., MD	1
	Dx: Parkinson's disease [G20], Mild cognitive impairment, so stated [G31.84], Other specified anxiety disorders [F41.8], Hereditary and idiopathic neuropathy, unspecified [G60.9]			

Gov. Ex. 158

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology

Visit Information

Provider Information

Encounter Provider	Authorizing Provider	Referring Provider
Lai, Eugene C., MD	Lai, Eugene C., MD	Pool, James L., MD

Department

Name	Address	Phone	Fax
HMNI Stanley H Appel Dept of Neurology	6560 Fannin Street Suite 802 Houston TX 77030-2725	713-441-3780	713-790-5079

Follow-up and Dispositions

- Return in about 4 months (around 6/2/2021) for Next scheduled follow up.

Level of Service

Level of Service
PR OFFICE/OUTPATIENT ESTABLISHED MOD MDM 30-39 MIN

Research Study Linked to Office Visit on 2/2/2021

No research study is linked to this encounter.

Patient as-of Visit

Problem List as of 2/2/2021

Problems last reviewed by Lai, Eugene C., MD on 2/2/2021 1008

Dementia associated with Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1503]*

Diagnosis: Dementia associated with Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Idiopathic peripheral neuropathy *[last edited by Lai, Eugene C., MD on 2/21/2020 2038]*

Diagnosis: Idiopathic peripheral neuropathy | Noted on: 02/21/2020 | Chronic: No

[redacted] *[last edited by Lai, Eugene C., MD on 2/21/2020 2037]*

Diagnosis [redacted] disorder | Noted on: 02/21/2020 | Chronic: No

Parkinson's disease (HCC) *[last edited by Lai, Eugene C., MD on 1/8/2020 1452]*

Diagnosis: Parkinson's disease (HCC) | Noted on: 01/08/2020 | Chronic: No

Allergies as of 2/2/2021

Allergies last reviewed by Lai, Eugene C., MD on 2/2/2021 1008
No Known Allergies

History as of 2/2/2021

Medical History as of 2/2/2021

Medical last reviewed by Lai, Eugene C., MD on 2/2/2021
None

GOVERNMENT EXHIBIT
4:21-CR-009-GCH
No. 158

Surgical History as of 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Patient as-of Visit (continued)

Surgical last reviewed by Lai, Eugene C., MD on 2/2/2021
None

Family History as of 2/2/2021

Family History as of 2/2/2021

Substance & Sexuality History as of 2/2/2021

Tobacco Use as of 2/2/2021

Tobacco Use last reviewed by Lai, Eugene C., MD on 2/2/2021

Smoking Status	Smoking Start Date	Smoking Quit Date	Packs/Day	Years Used
Never Smoker	—	—	—	—

Types	Comments	Smokeless Tobacco Status	Smokeless Tobacco Quit Date	Source
—	—	Never Used	—	Provider

Alcohol Use as of 2/2/2021

Alcohol Use last reviewed by Pena, Flor, MA on 2/2/2021

Alcohol Use	Drinks/Week	Alcohol/Week	Comments	Source
Never		—	—	Provider

Drug Use as of 2/2/2021

Drug Use last reviewed by Pena, Flor, MA on 2/2/2021

Drug Use	Types	Frequency	Comments	Source
Never	—	—	—	Provider

Sexual Activity as of 2/2/2021

Sexual Activity last reviewed by Pena, Flor, MA on 2/2/2021

Sexually Active	Birth Control	Partners	Comments	Source
Defer	—	—	—	Provider

Socioeconomic History as of 2/2/2021

Socioeconomic as of 2/2/2021

Marital Status	Spouse Name	Number of Children	Years Education	Education Level	Preferred Language	Ethnicity	Race	Source
Married	—	—	—	—	English	Not Hispanic or Latino	Caucasian	—

Medication List

Medication List

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Medication List (continued)

This report is for documentation purposes only. The patient should not follow medication instructions within.
For accurate instructions regarding medications, the patient should instead consult their physician or after visit summary.

Active at the End of Visit

Medications last reviewed by Lai, Eugene C., MD on 2/2/2021 1008

buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 100 mg by mouth 3 (three) times a day. 2 tablets every morning, 1 tablet every evening
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

levothyroxine (SYNTHROID) 75 mcg tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 75 mcg by mouth every morning.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/9/2019
Informant: Family Member

testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Place 1 Squirt on the skin daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

traZODone (DESYREL) 50 MG tablet *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 50 mg by mouth nightly.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 3/13/2019
Informant: Family Member

omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule *[reconciled by Riley, Lillian R, MA on 1/8/2020 1311]*

Instructions: Take 1 capsule by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Informant: Family Member

levomefolate calcium (L-METHYLFOLATE ORAL) *[reconciled by Riley, Lillian R, MA on 1/8/2020 1314]*

Instructions: Take 1 tablet by mouth daily.
Entered by: Riley, Lillian R, MA
Entered on: 1/8/2020
Start date: 10/1/2019
End date: 6/1/2021
Informant: Family Member

Exelon 9.5 mg/24 hr

Instructions: Place 1 patch on the skin daily.
Authorized by: Lai, Eugene C., MD
Ordered on: 6/12/2020
Start date: 6/12/2020
End date: 3/15/2021
Quantity: 90 patch
Refill: 1 refill by 6/12/2021

Eliquis 2.5 mg tablet

Instructions: TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.
Authorized by: Lai, Eugene C., MD
Ordered on: 11/11/2020
Start date: 11/11/2020
End date: 2/9/2021
Quantity: 180 tablet
Refill: No refills remaining

carbidopa-levodopa (SINEMET) 25-100 mg per tablet

Instructions: TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
Authorized by: Lai, Eugene C., MD
Ordered on: 11/11/2020
Start date: 11/11/2020
End date: 3/15/2021
Quantity: 540 tablet
Refill: 3 refills by 11/11/2021

clonAZEPAM (KlonoPIN) 0.5 MG tablet

Medication List (continued)

Instructions: TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME
Authorized by: Lai, Eugene C., MD
Ordered on: 12/22/2020
Start date: 12/22/2020
End date: 2/20/2021
Quantity: 30 tablet
Refill: 1 refill by 6/20/2021

rosuvastatin (CRESTOR) 5 mg tablet *[reconciled by Pena, Flor, MA on 2/2/2021 0921]*

Instructions: Take 5 mg by mouth daily.
Entered by: Pena, Flor, MA
Entered on: 2/2/2021
Start date: 11/10/2020
Informant: Family Member

Myrbetriq 50 mg tablet extended release 24 hr *[reconciled by Pena, Flor, MA on 2/2/2021 0921]*

Instructions: Take 50 mg by mouth daily.
Entered by: Pena, Flor, MA
Entered on: 2/2/2021
Start date: 12/14/2020
End date: 6/1/2021
Informant: Family Member

Stopped in Visit

None

Progress Notes

Progress Notes

Lai, Eugene C., MD at 2/2/2021 0930

Author: Lai, Eugene C., MD
Service: —
Author Type: Physician
Filed: 2/3/2021 7:59 AM
Encounter Date: 2/2/2021
Creation Time: 2/2/2021 9:28 AM
Status: Signed
Editor: Lai, Eugene C., MD (Physician)

NEUROLOGY FOLLOW-UP CLINIC VISIT

Patient is a 79-year-old ambidextrous man with a history of Parkinson's disease, mild cognitive impairment, REM sleep behavior disorder, ocular migraine, hyperlipidemia, hypothyroidism, atrial fibrillation, [redacted] glaucoma, melanoma, [redacted]

He comes with his wife, Dorothy, for follow-up of his Parkinson's disease. Last visit was on 2/12/2020. He reports physically stable. He has retired as CEO of his software company but is still under a lot of stress. Sleep is better with trazodone and clonazepam. Appetite is good. Basic activities of daily living are independent, but slower. Gait and balance are mildly unsteady but he does not use a cane. He has no recent fall. [redacted] His wife needs to help him in organizing his responsibilities and taking care of legal issues. Memory is impaired but stable. He uses Exelon patch 9.5/24h daily. He does not exercise regularly due to low back pain and also not able to go to the Houstonian for exercise. He tries to walk a little with his housekeeper every other day. He takes carbidopa/levodopa 25/100 2 tablets only 2 times a day at 8 am and 8 pm, and he typically forgets his 2 pm dose.

There is no new neurological complaint. He has slowness, stiffness, and gait imbalance. He lacks energy and is inactive. He denies recent headache, dizziness, weakness, confusion, dysarthria, dysphagia.

MEDICATIONS:	Sig
• Myrbetriq 50 mg tablet extended release 24 hr	Take 50 mg by mouth daily.
• rosuvastatin (CRESTOR) 5 mg tablet	5 mg daily.
• clonAZEPAM (KlonoPIN) 0.5	TAKE ONE TABLET BY MOUTH EVERY EVENING

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

MG tablet	AT BEDTIME
• carbidopa-levodopa (SINEMET) 25-100 mg per tablet	TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
• Eliquis 2.5 mg tablet	TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.
• Exelon 9.5 mg/24 hr	Place 1 patch on the skin daily.
• buPROPion SR (WELLBUTRIN SR) 100 MG 12 hr tablet	Take two tablets every morning and one every evening [redacted]
• levomefolate calcium (L-METHYLFOLATE ORAL)	Take one tablet by mouth daily to lower homocysteine
• levothyroxine (SYNTHROID) 75 mcg tablet	Take one tablet every morning for hypothyroidism
• omega 3-dha-epa-fish oil (FISH OIL) 100-160-1,000 mg capsule	Take by mouth.
• testosterone (ANDROGEL) 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump	Place on the skin.
• traZODone (DESYREL) 50 MG tablet	Take 50 mg by mouth.

REVIEW OF SYSTEMS:
Constitutional: Positive for easy fatigue, lack of energy. Weight loss of about 3.5 lbs. since last visit.
Eyes: Positive for visual disturbance due to glaucoma.
ENT: Positive for hearing loss. No nose bleed, sore throat.
Respiratory: Negative for cough and shortness of breath.
Cardiovascular: Negative for chest pain, palpitation, leg swelling.
Gastrointestinal: Positive for mild constipation. No diarrhea, abdominal pain.
Genitourinary: Positive for nocturia, frequency, urgency. No dysuria.
Musculoskeletal: Positive for low back pain. Negative for other joint pain, joint swelling, muscle pain.
Skin: Negative for rash, lesion.
Hematological: Negative for bruising, bleeding, adenopathy.
Allergy/Immunology: Negative for allergy symptoms.
Psychiatric/Behavioral: [redacted] No agitation.
Neurological: See above.

FAMILY/SOCIAL HISTORY: Lives with wife. No cigarettes and rare alcohol. They are in the process of moving to the River Oaks area closer to their son.

EXAMINATION:
Vitals:

	02/02/21 0919	02/02/21 0922
BP:	122/74	133/74
BP Location:	Left arm	Left arm
Patient Position:	Sitting	Standing
Pulse:	84	76
Temp:	96.9 °F	
Weight:	86 kg (189 lb 9.6 oz)	
Height:	5' 11.5"	

General: Well developed and well nourished elderly man in no acute distress. He is subdued but pleasant and cooperative.

HOUSTON Methodist LEADING MEDICINE
HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

Physical: Head and face are normal. No pain or tenderness to palpation. No edema or rash. Mild hypomimia and hypophonia.
Neurological: 'On' state
MS: He is alert and attentive. O x person, place, and time. He follows complex verbal commands. Memory is 4/4 immediate -> 0/4 delayed. Comprehension and expression are slower. Insight and judgment are mildly impaired.
MoCA score (1/8/2020) = 20/30.
CN: II-XII symmetrical and adequate except bilateral hearing loss. EOM full and tongue is midline.
Motor: Strength is 5/5 and symmetrical except bilateral hip flexors, 5-/5. No tremor and mild rigidity in limbs.
Sensory: Decreased to vibration in both feet.
Coordination: F->N->F without dysmetria. Rapid alternating movements are slower bilaterally.
Gait: He arises from sitting without assistance. He walks with a slightly wide-based gait. Decreased arm swings and hesitant in turning without assistance. He can perform heel, toe walking but not tandem walking.

	VISIT DIAGNOSES:	ICD-10-CM
1.	**Parkinson's disease (HCC)**	**G20**
2.	Mild cognitive impairment	G31.84
3.	[redacted]	
4.	Idiopathic peripheral neuropathy	G60.9

IMPRESSION:
Significant for: Clinical findings are consistent with Parkinson's disease with mild cognitive impairment.
He is under a lot of stress trying to still run his company by himself, and his wife is also stressed out.
He has signs of mild cognitive impairment and peripheral neuropathy with gait imbalance.
Neurological and cognitive examinations are without notable change from last visit.
Physical examination is stable.

PLANS:
Patient's neurologic condition and management are discussed with him and his wife at length again.
He needs to take carbidopa/levodopa 25/100 2 tablets 3 times a day at 8:30 am, 1:30 pm and 6:30 pm and on time. Take about at least 30 minutes before or after meals.
Put Exelon patch 9.5 mg/24h topically every day on shoulders and back and rotate over 14 areas, for cognitive stabilization. Get instructions from the Internet for "Exelon patch placement'.
Continue trazodone 50 mg and clonazepam 0.5 mg at bedtime for sleep and RBD.
Continue bupropion 100 mg 2 tablets in the morning and 1 tablet at bedtime for mood stabilization.
Continue other present medications.
I will order physical and occupational therapy at home after he moves into his new house.
He should not drive his car for now.
Keep physically and mentally active. Exercise regularly.
Follow up with Dr. James Pool, PCP.
Return to clinic in 4 months.

Total time spent today in evaluation and treatment of patient, including review of previous medical records and counseling = 32 minutes.

PATIENT EDUCATION:
[x] Patient [x] Significant other(s)
Topic:
Disease specific issues [x]
Medications [x]
Medication Side effects [x]
Tests [x]

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Progress Notes (continued)

Treatment/follow-up plans [x]
Consults [x]
Surgical plan [ ]
Teaching Method: Discussion [x] Handouts [ ]
Patient/family Response: Verbalize understanding and agree(s) with treatment plans [x]

Today I spent >50% of visit time on counseling and patient education.

Eugene C. Lai, M.D., Ph.D.
Robert W. Hervey Distinguished Endowed Chair in Parkinson's Disease
Professor of Neurology and Neuroscience
Director, Neurodegenerative Disease Clinic

Stanley H. Appel Department of Neurology
Houston Methodist Neurological Institute &
Weill Cornell Medical School
6560 Fannin, Suite 802
Houston, Texas 77030
TEL. 713-441-0239
FAX. 713-790-5044

Electronically signed by Lai, Eugene C., MD at 2/3/2021 7:59 AM

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology
All Parent Orders

Medications - All Orders

rosuvastatin (CRESTOR) 5 mg tablet [335306867] Patient-reported historical medication

Ordering date: 02/02/21 0921
Ordering mode: Standard
Frequency: Routine Daily 11/10/20 - Until Discontinued
Authorized by: Provider, Historical, MD
Class: Historical Med

Myrbetriq 50 mg tablet extended release 24 hr [335306868] Patient-reported historical medication

Ordering date: 02/02/21 0921
Ordering mode: Standard
Frequency: Routine Daily 12/14/20 - 06/01/21
Discontinued by: Francia, Loi S 06/01/21 1237
Authorized by: Provider, Historical, MD
Class: Historical Med

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Vitals (continued)

Most recent update: 2/2/2021 9:24 AM by Pena, Flor, MA

Vital Signs - Last Recorded

BP	Pulse	Temp	Ht	Wt
133/74 (BP Location: Left arm, Patient Position: Standing)	76	96.9 °F	5' 11.5"	86 kg (189 lb 9.6 oz)

BMI
26.08 kg/m²

Flowsheets

Custom Formula Data

Row Name	02/02/21 0922	02/02/21 0919
Adult IBW/VT Calculations		
IBW/kg (Calculated)	—	76.45 -FP at 02/02/21 0919
Low Range Vt 6mL/kg	—	458.7 mL/kg -FP at 02/02/21 0919
Adult Moderate Range Vt 8mL/kg	—	611.6 mL/kg -FP at 02/02/21 0919
Adult High Range Vt 10mL/kg	—	764.5 mL/kg -FP at 02/02/21 0919
IBW/kg (Calculated) (lbs)	—	168.54 -FP at 02/02/21 0919
OTHER		
BMI (Calculated)	—	26.08 -FP at 02/02/21 0919
IBW/kg (Calculated) Male	—	76.45 kg -FP at 02/02/21 0919
IBW/kg (Calculated) Female	—	71.95 kg -FP at 02/02/21 0919
BMI	—	26.08 -FP at 02/02/21 0919
Total Weight Change	—	189.6 -FP at 02/02/21 0919
Total Weight Change	—	+189.6 -FP at 02/02/21 0919
Weight Change Since Last Visit	—	-3.4 -FP at 02/02/21 0919
Weight Change Since Last Visit	—	-3.4 -FP at 02/02/21 0919
Internal Initial Weight - Reference Only	—	0 -FP at 02/02/21 0919
Fluid Needs	—	62172 -FP at 02/02/21 0919
BSA (Calculated - sq m)	—	2.08 sq meters -FP at 02/02/21 0919
ED VITALS FORMULA	2 -FP at 02/02/21 0924	3 -FP at 02/02/21 0922
MAP (Calculated)	93.67 -FP at 02/02/21 0924	90 -FP at 02/02/21 0922
Body Composition Analysis		
BMI	—	26.08

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

-FP at 02/02/21 0919

Dietitian Vitals		
BMI (Calculated)	—	26.08 -FP at 02/02/21 0919
IBW/kg (Calculated)	—	76.45 -FP at 02/02/21 0919
IBW/kg (Calculated) Female	—	71.95 kg -FP at 02/02/21 0919
IBW/kg (Calculated) Males	—	76.45 -FP at 02/02/21 0919
Fluid Needs		
Total Fluid Estimated Needs	—	62172 -FP at 02/02/21 0919
Relevant Labs and Vitals		
Temp (in Celsius)	—	36.1 -FP at 02/02/21 0922

Data

Row Name	02/02/21 0922	02/02/21 0919
OTHER		
Change in SBP	11 -FP at 02/02/21 0924	122 -FP at 02/02/21 0922

Encounter Vitals

Row Name	02/02/21 0922	02/02/21 0919
Enc Vitals		
BP	133/74 -FP at 02/02/21 0924	122/74 -FP at 02/02/21 0922
Pulse	76 -FP at 02/02/21 0924	84 -FP at 02/02/21 0922
Temp	—	96.9 °F -FP at 02/02/21 0922
Weight	—	86 kg (189 lb 9.6 oz) -FP at 02/02/21 0919
Height	—	5' 11.5" -FP at 02/02/21 0919
Vital Signs		
BP Location	Left arm -FP at 02/02/21 0924	Left arm -FP at 02/02/21 0922
Patient Position	Standing -FP at 02/02/21 0924	Sitting -FP at 02/02/21 0922

Social Determinants

Row Name	02/02/21 09:19:45
Alcohol Use	
How often do you have a drink containing alcohol?	Never Data migrated from History -FP at 05/18/21 1428

Vital Signs

Row Name	02/02/21 1019

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

Flowsheets (continued)

OTHER	
Stimulants	000 -DH at 02/02/21 0919
Sedatives	220 -DH at 02/02/21 0919
Narcotics	100 -DH at 02/02/21 0919

User Key (r) = Recorded By, (t) = Taken By, (c) = Cosigned By

Initials	Name	Effective Dates	Provider Type	Discipline
FP	Pena, Flor, MA	11/21/20 - 03/15/21	Medical Assistant	—
DH	Hm Interface, Documentation Incoming	—	—	—

Patient Instructions

Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals.
Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'.
Will order physical therapy after you moved to your new house.
No driving for now.
Continue other present medications.
Keep physically and mentally active. Exercise regularly.

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Patient Instuctions

Patient Instructions History

Patient Instructions Revisions	Status	Date&Time	By User
Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals. Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'. Will order physical therapy after you moved to your new house. No driving for now. Continue other present medications. Keep physically and mentally active. Exercise regularly.	Addendum	02/02/2021 10:06 AM	LAI, EUGENE
Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals. Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'. Will order physical therapy after you moved to your new house. Continue other present medications. Keep physically and mentally active. Exercise regularly.	Signed	02/02/2021 10:05 AM	LAI, EUGENE

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary

AFTER VISIT SUMMARY

Robert T. Brockman MRN: 003768603

2/2/2021 9:30 AM HMNI Stanley H Appel Dept of Neurology 713-441-3780

Instructions from Eugene C. Lai, MD

Continue carbidopa/levodopa 25/100 2 tablets at 8:30 am, 1:30 pm and 6:30 pm. Take about at least 30 minutes before or after meals.
Put Exelon patch 9.5/24h topically every day on shoulders and back. Get picture from the Internet for "Exelon patch placement'.
Will order physical therapy after you moved to your new house.
No driving for now.
Continue other present medications.
Keep physically and mentally active. Exercise regularly.

Return in about 4 months
(around 6/2/2021) for Next scheduled follow up.

What's Next

You currently have no upcoming appointments scheduled.

Allergies

No Known Allergies

Preventive Care

Topic	Due
COVID-19 VACCINE (1 of 2)	05/28/1957
SHINGLES VACCINES (1)	05/28/1991

Current Health Issues

Dementia associated with Parkinson's disease
Nerve disorder
Mixed anxiety depressive disorder
Parkinson disease

Today's Visit

You saw Eugene C. Lai, MD on Tuesday February 2, 2021. The following issues were addressed: Parkinson disease, Mild cognitive impairment, Mixed anxiety depressive disorder, and Nerve disorder.

Blood Pressure 133/74	BMI 26.08
Weight 189 lb 9.6 oz	Height 5' 11.5"
Temperature 96.9 °F	Pulse 76

Patient Care Team

	Relationship	Specialty	Notifications	Start	End
Pool, James L., MD	**PCP - General**	Endocrinology		12/26/19	
Phone: 713-798-0180	Fax: 713-798-0174				

MyChart Signup

Our records indicate that you have an active Houston Methodist MyChart account.

You can view your "After Visit Summary" by going to HoustonMethodist.org/mychart and logging in with your Houston Methodist MyChart username and password. If you are under 18 and would like to view your "After Visit Summary," please have your parent or guardian login with his or her own Houston Methodist MyChart username and password and access your records.

If you have questions, please call 832.667.5694 to speak with our Houston Methodist Customer Service Team. Remember, do not use Houston Methodist MyChart if you have an urgent need or request. For medical emergencies, dial **911**.

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology (continued)

After Visit Summary (continued)

Your Medication List as of February 2, 2021 10:09 AM

ⓘ Always use your most recent med list.

AndroGeL 20.25 mg/1.25 gram (1.62 %) gel in metered-dose pump Generic drug: testosterone	Place on the skin.
buPROPion SR 100 MG 12 hr tablet Commonly known as: WELLBUTRIN SR	Take two tablets every morning and one every evening to control depression
carbidopa-levodopa 25-100 mg per tablet Commonly known as: SINEMET	TAKE 2 TABLETS BY MOUTH THREE TIMES DAILY
clonAZEPAM 0.5 MG tablet Commonly known as: KlonoPIN	TAKE ONE TABLET BY MOUTH EVERY EVENING AT BEDTIME
Eliquis 2.5 mg tablet Generic drug: apixaban	TAKE ONE tablet (2 1/2 mg total) by mouth TWO (two) times A day.
Exelon 9.5 mg/24 hr Generic drug: rivastigmine	Place 1 patch on the skin daily.
Fish Oil 100-160-1,000 mg capsule Generic drug: omega 3-dha-epa-fish oil	Take by mouth.
L-METHYLFOLATE ORAL	Take one tablet by mouth daily to lower homocysteine
Myrbetriq 50 mg tablet extended release 24 hr Generic drug: mirabegron	Take 50 mg by mouth daily.
rosuvastatin 5 mg tablet Commonly known as: CRESTOR	5 mg daily.
Synthroid 75 mcg tablet Generic drug: levothyroxine	Take one tablet every morning for hypothyroidism
traZODone 50 MG tablet Commonly known as: DESYREL	Take 50 mg by mouth.

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary

HOUSTON Methodist LEADING MEDICINE

HMH SCURLOCK
6560 Fannin
HOUSTON TX 77030

Brockman, Robert T
MRN: 003768603, DOB: [redacted]1941, Sex: M
Visit date: 2/2/2021

02/02/2021 - Office Visit in HMNI Stanley H Appel Dept of Neurology
Diagnosis Summary (continued)

Visit Information

Date & Time	Provider	Department	Encounter #
2/2/2021 9:30 AM	Lai, Eugene C., MD	HMNI Stanley H Appel Dept of Neurology	2100089907549

Coding Summary for this Encounter

Code	Description	Service Date	Service Provider	Qty
99214	PR OFFICE/OUTPATIENT ESTABLISHED MOD MDM 30-39 MIN Dx: Parkinson's disease [G20], Mild cognitive impairment, so stated [G31.84], Other specified anxiety disorders [F41.8], Hereditary and idiopathic neuropathy, unspecified [G60.9]	2/2/2021	Lai, Eugene C., MD	1

Gov. Ex. 159

Message

From: Bob Brockman [bob_brockman@reyrey.com]
Sent: 1/20/2019 12:42:27 AM
To: 'Stuart Yudofsky' [stuart.yudofsky@gmail.com]

Stuart,

The meeting today went excellently – in spite of some unfortunate news. My belief is that when the whole truth comes out, that issue may look somewhat differently.

On another subject...

Looking thru some more of the symptoms on Google I have these as well...

-bad posture caused by sunken chest

-overall lack of stamina and strength

-major loss of balance – I couldn't stand up on the foredeck of a flats boat

-skin conditions – dryness, scaly skin, pretty much all over

-swallowing has changed – lots more saliva, tendency to partially choke a little on food happening more often

-depression

-ED – starting about a year ago

-close to the edge on incontinence – requires thoughtful planning of opportunities for urination – which is sometimes every hour

-reduced confidence in my ability to deal with rush hour traffic

-reduced memory ability

-reduced organizational ability

GOVERNMENT EXHIBIT
4:21-CR-009-GCH
No. 159

CONCLUSION

Please direct me to the right doctor as soon as possible. I am tied up on Tuesday. Friday I am in San Francisco – coming home on Sunday evening.

I am home the whole week of 1/28.

Thanks for your help.

Bob

GOVERNMENT EXHIBIT
159

CONFIDENTIAL TREATMENT REQUESTED BY
UNIVERSAL COMPUTER SYSTEMS HOLDING, INC.

UCSH 0221872

Gov. Ex. 160

Interview with Frank Gutierrez by Marc Agronin, MD on October 3, 2021

Frank Gutierrez is a personal aide to Robert Brockman. He has worked with Mr. Brockman for the past year plus and has seen him slowly but steadily decline physically and mentally. Mr. Brockman has needed significant assistance with daily functioning over the past year, and it has worsened since the most recent series of hospitalizations. Mr. Brockman had a recurrent urinary tract infection 2-3 weeks ago in hospital. Prior to the hospital he seemed different; not coherent; weak; not alert; fever 99-100 and then 102.3. He had a glazed look; not eating. Since coming home: Sleep; varies but OK. Appetite: Not great since hospital -- only 10-20% but improving. There is a lot of confusion with needing reminding and cueing. Does not make PB sandwich as he stated but with supervision. He recently fell in the bathroom and had a mild head bump, and redness on his shoulder and no swelling. There is some mild agitation every once in a while when he wants to do something and will pack a briefcase and try to go out as if he has meeting. Frank and Dorothy hen he has to tell him he is at home and not working at the office -- and he gets angry.

Current medications:

MORNING:
AZO cranberry urinary tract health 1 capsule in AM
Exelon patch 9.5 mg
Miralax capful
Carbidopa-levodopa 25-100 2 tablets
Bupropion SR 200 mg
Synthroid 75 mcg
Eliquis 2.5 mg
Stool softener 240 mg softgel
Vit D3 2000 IU 2 pills
Acidophilus softgel 1 pill

GOVERNMENT EXHIBIT
4:21-CR-009-GCH
No. 160

NOON:
Carbidopa-levodopa 25-100 2 tablets
Cephalexin 250 mg

4 pm: Carbidopa-levodopa 25-100 2 tablets

NIGHT:
Trazodone 50 mg
Bupropion SR 100
Eliquis 2.5 mg
Rosuvastatin 5 mg
Quetiapine 25 mg

GOVERNMENT EXHIBIT
160